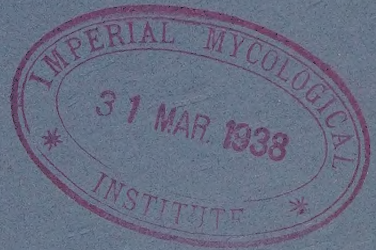


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GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT
MARCH, 1938



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MINISTRY OF AGRICULTURE

MONTHLY REPORT

MARCH, 1938.

The present summer-like weather is in striking contrast to the snow storms of last year, and it seems almost certain that spring work will be completed under very favourable conditions early this year. Some information on the growing of barley, advice on seeds mixtures for hay and pasture, and notes on suitable manurial mixtures for crops, are included in this issue.

A special article dealing with the Agricultural Output of Northern Ireland in the years 1930/31 to 1935/36 appears on page 578. Since the publication of the Report of the Agricultural Output of 1925, which embodied the results of the census of agricultural production of that year, no comprehensive information has been published on this subject. This article, which meets a much-felt want, is thus of particular interest. It not only traces changes in the volume of the output, but also in the income from farm production in Northern Ireland during some of the most critical years in the experience of farmers, and places in their right perspective the results of the Marketing Schemes and other legislation which have been introduced to set agriculture on its feet again.

The general reader may be daunted by the unusual length of the article and the mass of detail contained in it; he is recommended, therefore, to turn first to the summary of the figures in Table 1 (pages 606 and 607), and the introduction on page 578; and secondly to the "Summary and Conclusions" of the article on page 603. Readers who wish for detailed information about any individual product may turn to the body of the article, which deals with the output of each of the principal classes of livestock, of livestock products and of field crops, more or less in the order in which they appear on Table 1.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1st MARCH, 1938.

The month of February was, in the main, very favourable for seasonal work on the farm. In the earlier part, rather wild and wet conditions were experienced on several days, and at the close of the month the weather again became unsettled, but for the greater part good open weather prevailed. Farmers were therefore enabled to make rapid strides with all forms of seasonal field work. The temperatures on the whole were high for the time of the year, but during the wet spells at the beginning and at the end of the month, and on those days when cold easterly winds were very much in evidence, temperatures fell to seasonally low levels. Continuous bright sunshine was a feature of many days in the middle of the month, and heralded the rapid approach of spring. The winds and the sunshine quickly dried up the sodden ground, and in most areas the plough was brought into action in the second week of the month, and this work continued uninterrupted until the close. Other seasonal operations pushed forward during the fine spell were the clearing of potatoes and roots from the fields; the sowing of wheat; the planting of potatoes in the early districts; the application of lime to pastures and to tillage land; the carrying out of land reclamation work, including drainage, the renovation of hedges and the clearing of water courses. The threshing of grain crops and the scutching of flax also proceeded during the month.

Pasture lands have improved since the arrival of the rains at the end of February. Previously, however, their condition was more or less stationary, as the dry weather with very cold east winds, together with ground frosts on several nights, retarded growth. The general state of pastures at the moment is about normal for the time of the year, and there is a fair amount of "keep" available for grazing animals. The application of lime to agricultural land continued on an increased scale, and the various lime works have been kept busy in meeting farmers' demands for supplies. Owing to the continued shortage of supplies of British basic slag, many farmers have been unable to take advantage of the special terms of the Land Fertility Scheme in so far as it concerns that fertiliser. On this account, therefore, the application of phosphatic manures may be restricted, although it is learned that many farmers have taken the Ministry's advice and are using Gafsa Rock Phosphate, where slag was not obtainable.

There are plentiful supplies of home-grown foods on most farms, and it is considered that with the comparative mildness of the winter season, there will be a carry-over of supplies of fodder this year. Although there have been some complaints about the keeping qualities of turnips on some farms, as a general rule the roots have kept very well. The large stocks of potatoes remaining on farms are being used to an increasing extent for feeding to livestock, and the whole position in regard to home-grown foods remains very satisfactory. In regard to purchased meals and concentrates, the position is not much altered, but the prices of some of the principal foods eased during February. This was due to some extent to the slackening of the demand, resulting from improved weather conditions and the tendency for farmers to reduce their bills to a minimum by the greater use of home-grown foods, including potatoes.

Generally speaking, cattle and sheep are in a fairly good condition and the bill of health is clean. Most of the outlying cattle and sheep received hand-feeding, but a fair number of animals went back a little in condition as a result of the cold spells and the shortage of good keep. Some owners were giving outlying stores liberal rations in order that they would be ready for the first rush of grass-fed beef on the markets. Stores remained very dear during February, and on this account stall feeding has tended to decrease as some farmers maintain that with the present costs of feeding stuffs, the fattening of cattle is not so profitable.

Lambing proceeded during the month, and at the close was more or less general. With conditions on the whole very favourable, stock-owners report very satisfactory results.

THE CROPS.

WHEAT.—Further sowings of autumn varieties of wheat were made last month. In view of the area already sown with wheat, it is thought to be unlikely that there will be much spring wheat sown this year. Reports indicate that there is a larger area sown under wheat than in 1937 when, owing to the adverse weather conditions the sowings were restricted.

In a few districts, a small proportion of the crop still remains unthreshed. The grain and straw are of fair to good quality, and prices for grain have shown little alteration at around 9/3d. per cwt.

OATS.—The threshing of this crop continued during last month, and this work is now nearing completion although in a few districts a fair proportion of the crop has still to be threshed. The results on the whole have been moderately good. The crop is largely grown for consumption on the farm, but fairly good supplies were marketed last month.

Prices continued their steady upward trend and averaged $7/6\frac{1}{4}$ d. per cwt. for February, as against $7/3\frac{1}{2}$ d. per cwt. in January, and $6/9\frac{1}{4}$ d. per cwt. in February, 1937. Oat straw was little changed in supply and the average quotation for February was $44/3$ d. per ton, a rise of 11d. on the month.

Preparations are well advanced for the sowing of the new crop.

BARLEY.—In the case of this crop farmers have the incentive to grow more for their own requirements next season, having regard to the continued dearth of purchased food stuffs. Yields of last year's crop were, on the general run, fair to good, but in some cases the crops were very irregular and a partial failure. Since defects of this nature can be remedied to a marked extent at lower cost this year by the treatment of the land with lime and phosphatic manures, farmers will be greatly encouraged to grow more barley for their own requirements, and so become less dependent on imported grain.

FLAX.—The work of scutching is nearly over, but in a few areas there remains a considerable amount of this work to be done, and it is reckoned that it will take the mills another month, working steadily, to complete it. Results of recent scutchings have been fairly good, but supplies of flax marketed of late included an appreciable proportion of poor quality which has tended to depress prices. For good quality flax, however, there has been a steady demand and prices have been more or less firm. The average quotation for the month of February was $9/11$ d. per stone, or $1\frac{1}{4}$ d. less than that for the previous month, but $1\frac{1}{2}$ d. above the figure for the corresponding month of last year.

It is unlikely that there will be any marked change in the area sown under flax during the coming season, and this is more or less confirmed by enquiries for seed. Some reports suggest a decrease in the area, as farmers are anticipating difficulties in regard to obtaining labour.

POTATOES.—The lifting of potatoes from pits in the fields progressed rapidly under very favourable conditions last month, and farmers were enabled to get on with the ploughing work. The tubers have kept exceptionally well in pits and in store, and only a relatively small proportion have suffered loss or damage from rotting or sprouting. In such cases defects have been due to the fact that storing was done last year when wet weather or wet ground conditions prevailed, and through neglect to ensure that the stocks were properly protected from the weather. The poor trade in potatoes during this season is shown by the estimates supplied in respect of the stocks remaining on farms, which vary from 25 per cent. to 75 per cent. of the entire production in particular areas. Farmers are now using the crop to an increasing extent for feeding to livestock and poultry in order to cut their losses.

With the shipping demand remaining dull, prices throughout February kept at very low levels.

Growers' prices per ton for the week ended 5th March were as follow:—

WARE.

			<i>Bagged.</i>			<i>Loose.</i>	
Up-to-Date	..	..	£2	0 0 to £2	5 0	£1	15 0
Arran Banner	..	..	£1	10 0 to £1	12 6		
Arran Consul	..	..	£1	15 0 to £1	17 6	£1	10 0 to £1 15 0
Arran Victory	..	..	£1	12 6 to £2	0 0	£1	10 0 to £1 15 0
Kerr's Pink	..	..	£1	15 0 to £2	5 0	£1	10 0 to £2 0 0

SEED.

			<i>Bagged.</i>	
Arran Banner	..	..	£3	0 0
Majestic	..	..	£3	10 0

The following were the shipments made last month, compared with a year ago:—

<i>Week ended</i>		<i>Tons</i>	<i>Week ended</i>		<i>Tons</i>
5th February, 1938	..	4,409	6th February, 1937	..	4,939
12th	"	4,665	13th	"	4,701
19th	"	5,105	20th	"	5,023
26th	"	5,393	27th	"	5,006

At markets, where reduced supplies were offered for local consumption, prices showed an easier tendency during February, and averaged 2/3½d. per cwt., a reduction of ¾d. on the month.

ROOTS.—On most farms turnips have kept very well this year and supplies will likely last out the season, but some complaints have been received of the roots rotting in the field. Mangels are keeping well in pits, except in a few cases where damage by frost occurred before the roots were stored. Mangels have been used only to a very slight extent as yet. With the mildness of the winter, and the fact that potatoes are being used to an increasing extent, there should be ample supplies of roots for normal requirements.

HAY.—Supplies of good quality hay are plentiful, and unless the spring season is unduly severe there should be a fair amount carried over to next year. The quality is moderate to good, and supplies were being fed liberally to outlying cattle last month.

Larger quantities of hay were marketed during the past month than in the month previous, and firmer rates were obtained averaging 61/8d. per ton for 1st and 2nd years' (upland) hay, and 48/8½d. per ton for meadow hay.

For the smaller lots of rye grass seed at a few centres average prices per cwt. for the month were—Italian 10/-, Perennial 8/8½d., and mixed 7/- as compared with 8/9½d., 9/1½d. and 7/- respectively in January.

LIVE STOCK.

CATTLE.—The general condition of store cattle is fair to good, and there were no outbreaks of disease or other forms of ill-health excepting two cases of anthrax. Hand-feeding continued on a reduced scale, and those animals

which received some meal and cake in addition to the usual supplies of home-grown foods, were maintained in a thriving condition. Otherwise, outliers made but little improvement in condition as the results of the cold spells and the shortage of good quality keep, although fodder and roots were given in the usual quantities. As a rule supplies of stores at fairs last month were shorter than usual for the time of year and a keen trade was experienced at prices having a firmer tendency on the month. The high prices of forward store cattle and the dearness of foodstuffs have, it was reported, tended to discourage production for beef, but there was no shortage of fat animals at local centres during the month under review.

In the case of dairy cattle also, the maintenance of the stock in good condition was greatly dependent on feeding, and as a rule this was done reasonably well. There was, however, a tendency for some owners, misled perhaps by the rather early appearance of springlike weather, to reduce the quantity of meals and cakes fed, on account of their dearness, and in such cases the animals went back a little in milk production. Nevertheless the herds are in a normal healthy state in most districts, and the milk yield showed signs of improving during the month. Abortion and sterility still appear to be giving some trouble, but otherwise calving is normally satisfactory. The small numbers shown at fairs held during the past month were mostly of a medium standard of quality. Good young dairy cows and promising young springers in forward condition were in chief demand at unchanged rates, while other sorts were a little cheaper than a month ago.

SHEEP.—Where the flocks received ample feeding, the condition of the animals was maintained. This, however, was not generally practised, with the result that on the whole the position is not quite satisfactory, an appreciable number of animals being rather backward in condition. A few cases of liver fluke disease and foot rot have been reported, and "twin lamb" disease has caused casualties among ewes. Except for this lambing disease, the progress of lambing under the favourable weather conditions of last month was generally good. It is now general in all districts, and judging by the proportion of twins it seems likely that the crop will be fully up to the average in numbers.

The supplies of sheep and lambs at fairs last month were small and of indifferent quality. Except for a local enquiry for fat animals for butchering the demand was lifeless.

PIGS.—Young pigs were shown in smaller numbers than usual at most fairs, and with buyers very active a steady trade prevailed throughout February at improved prices.

Sows for breeding were also offered in smaller numbers and were in better demand, those likely to prove suitable being easily cashed at firmer rates ranging up to £10 10s. per head.

Supplies of dead pigs for curing were in better demand last month, and trade moved on faster lines than previously.

HORSES.—Although in some districts the demand has eased a little, the general position of the horse trade is little altered, and good young animals sound in wind and limb are still selling well at late rates. First class horses were fetching from £40 to £50, and second quality from £30 to £40. Some useful farm animals were quoted at from £25 to £35. A number of inferior horses failed to attract purchasers.

MILK.—Although the milk yield showed a slight seasonal increase during February, it remained at a low level for the month in most districts. Creameries paid from 4½d. to 7d. per gallon for milk delivered during the past month, the separated milk being returned to the farmer.

The rate of equalisation payments for milk produced in Northern Ireland and delivered to creameries for manufacturing purposes during January, has been determined at 0.19d. per gallon in accordance with the Milk and Milk Products Acts (Northern Ireland), 1934 to 1937.

It should be noted that under the regulations creameries are required to distribute the equalisation payments in accordance with the butter-fat contents of the milk received from each supplier.

THE COST OF LIVING INDEX FIGURE.

The cost of maintaining unchanged the pre-War standard of living of working-class families at February 1st was 57 per cent. above the level of July, 1914, or 2 points lower than that recorded at January 1st, but 6 points higher than a year ago.

At February 1st the index of retail prices of food in Great Britain and Northern Ireland, as ascertained by the Ministry of Labour, was 42 per cent. above the level of July, 1914, as compared with 45 per cent. at January 1st, and 35 per cent. at February 1st, 1937. The further decreases in the prices of butter and eggs have been mainly responsible for the fall in the current index.

THE MARKETS DURING FEBRUARY.

At the markets last month supplies of the principal vegetables were scarcer as compared with the previous month, and price movements generally tended upwards. The average price of cabbage and broccoli was ½d. dearer at 1/3d. and 2/0½d. per dozen respectively, while savoy improved by 1½d. to 1/3½d. per dozen. Parsley was 2½d. dearer at 8d. per bunch, but leeks were unchanged in price at 5½d. per bunch. Carrots at 10/2½d. per cwt., and parsnips at 7/3d. per cwt. were 4d. and 1½d. dearer respectively, but garden turnips at from 9d. to 1/4d. per cwt. were 2d. to 3d. cheaper than in January.

Supplies of farmers' butter were unchanged on the month, the increase in supplies of print butter counterbalancing the decrease in lump, and, compared with January, average prices were unaltered at 1/4d. per lb. for print and 1/2 $\frac{3}{4}$ d. for lump. Hen and duck eggs showed seasonal increases in supplies, and the prices as fixed by the Ministry from week to week followed the seasonal trend downward as indicated in the table below.

In the poultry section, supplies of hens, chickens and ducks were smaller than in the previous month. Ducks were 1 $\frac{1}{2}$ d. dearer at 2/0 $\frac{1}{4}$ d. each, chickens $\frac{1}{4}$ d. cheaper at 2/7 $\frac{1}{2}$ d. each, and hens made late rates at 1/8 $\frac{1}{4}$ d. each. The prices per lb. live weight paid by wholesale merchants ranged from 8d. to 9d. for winter chickens, and from 10d. to 10 $\frac{1}{2}$ d. for spring chickens, while hens and ducks were quoted at from 4d. to 6d.

At Omagh small lots of unwashed wool were marketed during the month, and long cheapened by 1d. to 8d. per lb., and mountain by 2d. to 6d. per lb.

MARKETING OF EGGS ACTS (N.I.) 1924—1937.

WHOLESALE DEALERS' PRICES.

The following table shows the prices fixed by the Ministry, and payable by licensed wholesale dealers, for eggs purchased from producers during the following weeks, as compared with the average prices at markets for the corresponding weeks of 1937.

Week ended	1938				1937			
	Hen Eggs per lb.*		Duck Eggs per doz.*		Hen Eggs per lb.		Duck Eggs per doz.	
	s.	d.	s.	d.	s.	d.	s.	d.
February 5th	0	10 $\frac{1}{4}$	1	6 $\frac{1}{2}$	0	8 $\frac{1}{2}$	1	1 $\frac{3}{4}$
„ 12th	0	9 $\frac{3}{4}$	1	4 $\frac{1}{2}$	0	8 $\frac{3}{4}$	1	1 $\frac{3}{4}$
„ 19th	0	8 $\frac{3}{4}$	1	2 $\frac{1}{2}$	0	9 $\frac{1}{4}$	1	1 $\frac{1}{2}$
„ 26th	0	7 $\frac{1}{4}$	1	1	0	9	1	2
†March 5th	0	6 $\frac{1}{4}$	1	0 $\frac{1}{2}$	0	7 $\frac{3}{4}$	1	0 $\frac{1}{4}$
„ 12th	0	6 $\frac{1}{4}$	0	11 $\frac{1}{4}$	0	6 $\frac{3}{4}$	0	11 $\frac{3}{4}$

* Where hen eggs are delivered by the producer to the packing store of a licensed wholesale dealer of Class A an additional $\frac{1}{4}$ d. per lb. is payable; in the case of duck eggs an additional $\frac{3}{4}$ d. is payable for each complete dozen so delivered.

† Payment on a quality basis came into operation during the week ended 5th March, 1938. The following are the standard deductions :—

Hen eggs : "Seconds" and soiled eggs $\frac{1}{2}$ d. per egg, Rejects $\frac{3}{4}$ d. per egg.

Duck eggs : Rejects 1d. per egg.

EXTENT AND PRODUCE OF THE FLAX CROP IN NORTHERN IRELAND IN 1937.

The average yield of the flax crop in Northern Ireland in 1937 is estimated at 35.1 stones (of 14 lb.) per statute acre, as against 31.7 stones in 1936, and 32.2 stones in the decennial period 1927-1936.

The following table shows the estimated extent, total produce and average yield per statute acre of the crop in Northern Ireland in 1937, with comparative figures for the year 1936 and the decennial period 1927-1936.

FLAX.

Year	Extent	Produce	Average yield per statute acre
	Acres	Tons	Stones (of 14 lb.)
1937	19,099	4,187	35.1
1936	25,376	5,033	31.7
Average of the ten years' period 1927 to 1936	21,812	4,342	32.2

AGRICULTURAL OUTPUT OF NORTHERN IRELAND, 1931 to 1936.

It is proposed in this article to present certain figures relating to the agricultural output of Northern Ireland during the years 1930/31 to 1935/36.

Since the publication of the Report on the Agricultural Output of Northern Ireland in 1925, no comprehensive information has been published on this subject. Though a further census of production was taken in 1930-31 the results appeared in only a provisional and a partial form in the Ulster Year Book of 1935.

In one way and another the Ministry's silence on this subject is connected with the changes in agricultural policy, which took place around 1932, namely the introduction of Marketing Acts and Schemes of various kinds for the reorganization of marketing, and the imposition of duties and quotas upon the imports of certain classes of agricultural produce.

As a result of these changes the functions of the Ministry increased greatly, and the demands upon the Statistics and Intelligence Branch, which has been responsible among other things for publications, were so enlarged that the publication of reports had to give way to other functions which were prior in point of urgency.

Apart from pressure of work, however, the introduction of Marketing Schemes and import control gave rise to a number of problems directly affecting the agricultural statistics.

These were broadly of two kinds: on the one hand the Marketing Schemes provided new sources of statistical data, sometimes of a partial nature only, which have involved in some cases changes in the methods of computing the output of the commodity to which they relate, and adjustments as between the old and the new data.

On the other hand, the imposition of duties, under the Irish Free State (Special Duties) Act, 1932, upon livestock imported across the Border appears to have given rise to considerable smuggling of cattle, and for certain purposes adjustments have had to be made in the cattle import statistics on the basis of enquiries carried out as to the extent of the smuggling. Though the evidence is clear in the case of cattle, the data have not justified the conclusion that smuggling of sheep and pigs was carried on to any appreciable extent after 1932, and similar adjustments have not been thought necessary where imports of these animals are concerned.

Now that the main difficulties have been surmounted, however, the Ministry feels able to present figures relating to the agricultural output with some degree of confidence. This article is intended provisionally to fill the gap left by the interruption of statistical reports, pending the publication in the

coming year of the 6th Report on the Agricultural Statistics of Northern Ireland, and it covers the output of livestock and livestock products, and of the principal crops with the exception of fruit, vegetables and glasshouse produce. While forms were sent out in connection with the census of production enquiry in 1930/31 to ascertain the output of fruit, vegetables and glasshouse produce in that year, the returns were so unsatisfactory that figures relating to these items have been omitted from this account. In 1925 the total output of these commodities was valued at £389,875, or 2.6 per cent. of the total output of Northern Ireland. Their omission will, therefore, not seriously affect the conclusions drawn from the figures as to changes in the gross agricultural income during these years.

Where convenient, information is given regarding the production and disposal of livestock and crops, but the article is mainly concerned with the volume and value of *the output*, details of which are set out in Table 1, page 606.

By production is meant the total produce of any crop or livestock department, i.e., the aggregate of sales off farms, home consumption, utilisation for further agricultural production, and additions to stocks; by disposal, the manner in which production is utilized, e.g., whether for sale to processing industries, for export, for addition to stocks, etc.; while by output is meant sales off farms and quantities consumed in farm households. It is important to bear these definitions in mind, especially the definition of output, in reading this article.

Throughout the article reference is made to the Report on the Agricultural Output of Northern Ireland, 1925, and this will be described for convenience as Cmd. 87.

LIVESTOCK AND LIVESTOCK PRODUCTS.

In 1924/25 the income from livestock and livestock products accounted for 81 per cent. of the value of the gross output of Northern Ireland farms, exclusive of the output of fruit, vegetables, and glasshouse produce. Since 1924/25 this proportion has changed very little, the average income from livestock and livestock products between the years 1930/31 and 1935/36, accounting for 82 per cent. of the average value of the output.

THE OUTPUT AND DISPOSAL OF CATTLE.

The importance of the cattle industry may be gauged from the fact that the output of cattle from Northern Ireland farms was worth on the average 18.1 per cent. of the value of the total output during the six years under review, and 22.2 per cent. of the output of livestock and livestock products.

There are two convenient methods of calculating the output of cattle and calves from Northern Ireland farms: first, the "births and deaths" method

described in Cmd. 87, page 24; and second, by the method of adding net exports of all cattle to the estimated total number of cattle slaughtered in Northern Ireland. Owing to the increasing number of cattle which escaped enumeration at the Border between the date of the imposition of duties on livestock under the Irish Free State (Special Duties) Act, 1932, and the end of 1935, when stringent measures were taken to prevent smuggling, the figures showing imports of cattle into Northern Ireland and *a fortiori* into the United Kingdom must be regarded as unreliable during this period, and the second method must, therefore, be ruled out.

For the purpose of the first method births of calves have been estimated at the rate of 83 per cent. of the number of milch cows in the country at the 1st June; details are given below.

	1924/25	1930/31	1931/32	1932/33	1933/34	1934/35	1935/36
Cattle (one year and over)	183,620	157,722	144,748	159,993	164,607	184,001	216,113
Calves (under 1 year)	63,828	15,698	5,216	10,436	-7,608	-21,250	5,582
Total	247,448	173,420	149,964	170,429	156,999	162,751	221,695

It will be seen from reference to Table 2 that the total output of cattle and calves in 1930/31 was only 70 per cent. of the 1924/25 output, and that the average output for the six years under review amounted to 173,000, or 74,000 below the 1924/25 level. The lowest output for the period was 150,000 in 1931/32. Fluctuations between 1931/32 and 1933/34 were followed by a sharp rise to 222,000 in 1935/36, which was only 10 per cent. below the exceptionally high 1924/25 figure.

A feature of the trend since 1930/31 is the steady decline in the output of calves. In 1924/25, 63,828 calves were slaughtered on or sold off farms in Northern Ireland. In 1930/31 the number had fallen to 15,698, and by 1933/34 no calves were being sold off farms, and output is shown as a negative quantity. In other words, while there was in 1924/25 a net export of calves of approximately 60,000 there was a net import of 7,608 (a) in 1933/34, and a net import of 21,250 (a) in 1934/35. This trend is significant of a change-over from the production of stores to fat cattle, which has been gradually taking place in Northern Ireland since 1925, but which was greatly accelerated by the introduction of the beef subsidy in 1934.

In order to illustrate this trend, an attempt has been made to divide the output of all cattle and calves into fat and store cattle respectively (store cattle here being used to cover calves and all cattle other than fat). The figures are set out in Table 2, and relate to calendar years. It appears that in 1925 only 25 per cent. of the total output of cattle were fat animals. The rest, numbering 159,000, were stores for export to Great Britain. By 1931 it is apparent that a considerably greater proportion of cattle were being fattened

(a) Cattle and calves under two years old.

in this country than in 1925, and this tendency to fatten more cattle on Northern Ireland farms becomes increasingly marked after 1933. From September, 1934, onwards, the beef subsidy of 5/- per live cwt. was paid to producers in respect of fat cattle finished in the United Kingdom; the subsidy encouraged farmers to finish their cattle in Northern Ireland instead of sending them in an unfinished condition for fattening by farmers in Great Britain, and it is interesting to note that as a result of this measure the average number of fat cattle produced in Northern Ireland during the years 1934 to 1936, namely, 157,000, exceeded the average for 1931 to 1933 by no less than 76,000, or almost 94 per cent. In 1933, 61 per cent., in 1934, 86 per cent., in 1935, 84 per cent. of the total output consisted of fat cattle; in 1936 the proportion of fats decreased to 75 per cent. The total output, at the same time, increased rapidly from 160,000 in 1934 to 224,000 in 1936.

TABLE 2.
Estimated output of Fat and Store Cattle, 1925, 1931-36.

Year	(1) Output of all Cattle (a)	(2) Output of cattle other than fat.	(3) Output of Fat Cattle.
	(000)	(000)	(000)
1925	212	159 (b)	53 (d)
1931	160	102 (b)	58 (d)
1932	162	76 (b)	86 (d)
1933	163	63 (b)	100 (d)
1934	160	22 (c)	138 (e)
1935	197	31 (c)	166 (e)
1936	224	56 (c)	168 (e)

(a) June to May calculations adjusted for calendar year on the basis of 5/12ths of the one year + 7/12ths of the next.

(b) Equivalent to net exports of cattle other than fat (i.e. mainly stores with a certain number of milch cows and springers) adjusted for unrecorded imports of these classes of cattle.

Unrecorded imports of cattle other than fat = 95% of unrecorded imports of all cattle.

Total unrecorded imports + net exports + slaughterings — output.

(c) Col. 1. — col. 3.

(d) Col. 1. — col. 2.

(e) Estimates based on the number of cattle certified for receipt of beef subsidy after September 1st, 1934 + the number of fat cows slaughtered in Northern Ireland.

Thus, in the last ten years, there has been a striking change in the type of Northern Ireland cattle production, and it may be said that the cattle industry in Ulster is now, in the main, producing directly for the butcher and the consumer. This statement remains true for 1937, despite the decrease in the number of animals certified for receipt of beef subsidy in that year.

The disposal of the output of cattle in each of the calendar years 1931 to 1936, viz., the numbers slaughtered in Northern Ireland and the numbers exported, is shown in Table 3.

TABLE 3.

Output and Disposal of Cattle and Calves in Northern Ireland,
1925, 1931-36.

Year	(1) Output (a)	(2) Estimated Slaughterings	(3) Net Exports (b)
	(000)	(000)	(000)
1925	212	95	117
1931	160	92	68
1932	162	88	74
1933	163	93	70
1934	160	99	61
1935	197	104	93
1936	224	108	116

(a) Col. 3, Table I.

(b) Col. 1—Col. 2.

The number of cattle slaughtered per annum in Northern Ireland represents fairly closely the number of beef animals required for consumption in Northern Ireland, the net import of beef being small, and equivalent to, roughly, only 1,200 animals per annum. If Table 2, Column 3, is compared with Table 3, Column 2, it will be seen that whereas in 1925 Northern Ireland produced only 56 per cent. of her beef requirements, the remainder being imported in the form of fat animals from the Irish Free State, in 1936 Northern Ireland farmers produced all the beef requirements of the country, and in addition exported a surplus of 60,000 fat animals for consumption in Great Britain.

The effect of this development on the value of the export trade is evident, and though average prices of cattle have fallen by 18 per cent. since 1925 this decline in prices is by no means as serious as it might have been owing to the fact that Northern Ireland was, in 1935/36, exporting on the average a relatively more valuable type of animal than in the earlier year. The average price of cattle sold off farms in England and Wales in 1935/36 was 37 per cent. below the figure for 1924/25.

Up to 1934 the output of cattle has been valued at the weighted average price of cattle sold at the 25 fairs in Northern Ireland from which the Ministry receives fair reports. Since September, 1934, however, the sale prices of all cattle certified for receipt of beef subsidy are returned to the Ministry, and are subsequently averaged by the Cattle Committee.

It seems reasonable, therefore, to adopt these average prices for fat cattle in valuing the number of cattle certified for receipt of subsidy; the remainder have been valued at the average prices ruling at fairs in Northern Ireland. On the whole it appears that certified prices are lower than the average prices of fat cattle as returned by the fair reporters.

The weighted average price of cattle in 1930/31 was 1 per cent. above the 1924/25 level, but it fell consistently from that year until the end of the period, and in 1935/36 it was only 82 per cent. of the average price in 1924/25.

The gross income from cattle sales reached its lowest point for the period in 1933/34, when it amounted to £1,976,000, but between that year and 1935/36 it increased by £586,000 or 30 per cent. to £2,562,000, when it exceeded the 1930/31 figure. Payments to fat cattle producers under the beef subsidy, and the total income from the sale of cattle inclusive of subsidy, for 1934/35 and 1935/36, are as follows:—

	Beef subsidy.	Total Income from Cattle Sales (inclusive of subsidy).
	£	£
1934/35	161,333	2,189,000
1935/36	285,769	2,848,000

THE OUTPUT AND DISPOSAL OF PIGS.

Table 4 shows the output and disposal of pigs. It may be seen that output is arrived at by adding together the sales of pigs to bacon curers, estimated sales to pork butchers, and estimated slaughterings for consumption in farm households. To these are added or subtracted net exports or net imports (as the case may be) of live pigs and pig carcasses.

TABLE 4.
Output and Disposal of Pigs.

	1925	1931	1932	1933	1934	1935	1936
1. No. of Pigs bought for curing ..	265,921	390,663	377,505	368,950	413,651	511,864	659,304
2. No. of Pigs cured on Farms (a) ..	20,000	20,000	19,000	19,000	19,000	19,000	19,000
3. No. of Pigs sold to Pork Butchers (a) ..	5,000	5,000	5,000	5,000	5,000	5,000	5,000
4. Net Import of Live Pigs (b) ..	37,357	46,663	55,665	20,218	-23,142	-79,723	-37,685
5. Net Import of Pig Carcasses (b) ..	99,000	111,500	74,000	49,000	15,000	-4,791	-3,097
6. Total Output (1) + (2) + (3) - (4) - (5) ..	154,564	257,500	271,840	323,732	445,792	620,378	724,086

(a) Estimate.

(b) Net export shown by — sign.

The year 1925 was one of abnormally low production, and output amounted to no more than 154,564 pigs; by 1931, however, it had increased by 66½ per cent. to 257,500. In 1932 an additional 14,000 pigs were sold off farms or consumed on farm households, output in that year amounting to 271,840 pigs.

In 1933 the Government's policy for the reorganisation of the marketing of pigs was introduced. Quantitative regulation of imports of bacon from foreign or Empire countries was secured at first by means of voluntary agreements with exporting countries, and later by compulsory orders of the Board of

Trade under the Agricultural Marketing Act, 1933. In the same year an Agricultural Marketing Act was brought into operation in Northern Ireland, and under this Act the Pigs Marketing Scheme was introduced in the autumn of 1933. The provision of a stable market and steady prices secured by the new policy made itself felt almost immediately. *

The pig output, as may be seen from Table 4, rose steeply from 324,000 in 1933, to 724,000 in 1936. The extent and importance of the increase can perhaps best be shown by means of the following table, which compares the output in each of the post-scheme years with the average output for the years 1928-32. These years represent a period of normal production, output fluctuating only slightly around a mean of 257,000.

	Output of Pigs	% Increase over 1928-32
Average—1928-32	257,000	00.0
1933	324,000	26.1
1934	446,000	73.5
1935	620,000	141.2
1936	724,000	181.7

It may be seen that in the three years since the Pigs Marketing Scheme came into operation (i.e., up to the end of 1936) output has increased from 126 per cent. to 282 per cent. of the level for 1928-32; in other words in 1936 it was nearly three times the normal production in the pre-scheme years.

It may be seen from Table 4 that by far the most important means of disposing of pigs in this country is by sale to bacon curers. The consumption of fresh pork in Northern Ireland is small, and it is estimated that only about 5,000 pigs a year are sold to pork butchers, and that some 20,000 pigs a year are slaughtered for consumption on farm households. Both of these estimates are somewhat conjectural, but nevertheless cannot be wide of the mark.

In view of the importance of sale to bacon curers, it is interesting to observe that the increase in pig production between 1933 and 1936 was accompanied by expansion in the bacon curing industry. The average number of pigs purchased by curers from 1928 to 1932 was 379,000, and purchases of pigs for curing in Northern Ireland in each of the years to 1936 are compared with this average in the table below.

	No. of Pigs bought by Bacon curers	% Increase over 1928-32
Average 1928-32	379,000	00.0
1933	369,000	-2.6
1934	414,000	9.2
1935	511,864	35.1
1936	659,304	74.0

* See Eleventh General Report of the Ministry of Agriculture. The figures given therein, with regard to output of pigs have been revised and slightly altered.

It is apparent that the throughput of curing factories in Northern Ireland in 1935 was 135 per cent., and in 1936 was 174 per cent. of the 1928-32 level. But a comparison of the relevant columns in Table 4 shows that curers' purchases did not increase commensurately with the output of pigs. Prior to 1934 the home production of pigs was insufficient to meet the annual requirements of the bacon factories in Northern Ireland. Thus net imports of live pigs in 1925 amounted to 37,357, and of pig carcasses 99,000. In 1931, 111,500 pig carcasses were imported, the number falling to 49,000 in 1933. By 1934, however, the deficiency indicated by these figures no longer existed; instead there was a surplus of pigs for export to Great Britain either in the form of pork or live pigs, which was equivalent to 8,000 in 1934, and had increased to just over 84,500 in 1935. Thus between 1934 and 1935 the bacon factories in this country, which previously required a number of pigs far in excess of the home output, became unable to absorb the expanding pig production.

While the pork market in Great Britain has provided, and will continue to provide a valuable outlet for a small number of surplus light weight pig carcasses, the shipment of live pigs for curing in Great Britain is clearly wasteful and expensive. Moreover, by curing as bacon all the pigs in Northern Ireland, additional employment will be provided. The Ministry of Agriculture, in collaboration with the Pig Industry Council, has therefore used its powers of licensing bacon factories to encourage the expansion of bacon production in this country.

The kind of bacon for which the restriction of imports into the United Kingdom has provided an increased demand is bacon of the Wiltshire cure, and not the rolled bacon which is predominantly produced in this country. The Ministry's policy has accordingly been directed to encouraging the establishment of factories equipped for the production of Wiltshire bacon, and as a result of this effort two Wiltshire bacon factories were set up in 1935. The success of this policy is shown by the figures. There was an increase of 29 per cent. in curers' purchases between 1935 and 1936, and between 1935 and 1936 the surplus of live pigs for export to Great Britain decreased from 79,723 to 37,685. The number of pigs put into Wiltshire cure was 73,000 in 1935, and 151,327 in 1936.

The average price of pork in 1930/31 was 72 per cent. of the 1924/25 price, and it continued to decline until in 1932/33 it was only 53 per cent. of the 1924/25 level. Following the introduction of the Pigs Marketing Scheme the price was appreciably raised in 1933/34, and allowing for deductions in respect of levies it remained fairly stable around a level of 57 per cent. of the 1924/25 figure.

Despite the fall in prices the gross value of the output was some £38,000 greater in 1930/31 than in 1924/25. The latter year was, as has already been

pointed out, a year of abnormally low pig production, whereas in 1930/31, which was a year of normal production for the pre-scheme period, output was 42 per cent. above the 1924/25 level. In the following year the value of the gross output of pigs declined by nearly £300,000, and recovered only slightly in 1932/33 to £1,236,000. After 1932/33, however, a rapid increase in the agricultural income from this source is apparent; from £1,796,000 in 1933/34 it increased by 30 per cent. to £2,343,000 in 1934/35, and by a further 37 per cent. to £2,995,000 in 1935/36, so that in the latter year the value of the output was about twice its value in 1924/25, and over two and a half times its value in 1931/32.

THE OUTPUT AND DISPOSAL OF SHEEP.

Sheep and lambs account for not more than 4 per cent. of the gross income from farm products, and are thus of considerably less importance in the live-stock economy of Northern Ireland than pigs, cattle or poultry. There has, however, been a considerable increase in the production of sheep since the Census of Production, 1925.

The average output of sheep and lambs between 1930/31 and 1935/36 (see Table 1) was 66 per cent. above the output for 1924/25, amounting to 340,745, as compared with 205,226 in the earlier year. Between 1930/31 and 1931/32 output increased by practically 100,000 from 261,493 to 360,949, and from 1932/33 onwards it varied around an average of 356,000.

The output and its disposal by calendar years are shown in Table 5. From this table it may be seen that the greater part of the output, averaging 62 per cent. between the years 1931 and 1936, is slaughtered in the country for consumption at home; the remainder, consisting exclusively of fat sheep and lambs, is exported to Great Britain.

TABLE 5.
Output and Disposal of Sheep and Lambs in Northern Ireland.

Year	Output	Estimated Slaughtering in Northern Ireland.	Net Exports (a)
	No.	No.	No.
1925	198,955	131,462	67,493
1931	319,509	182,092	137,417
1932	374,040	231,180	142,860
1933	364,278	227,635	136,643
1934	333,845	225,809	108,036
1935	347,696	216,017	131,679
1936	368,133	218,604	149,529

(a) Output, less slaughtering.

Slaughtering has substantially increased since 1925, and the 1931 figure is 38.5 per cent. above that of 1925, and there is a further increase of 28 per cent. between 1931 and 1932. There thus appears to be a tendency to consume more mutton and lamb in Northern Ireland.

The average price of sheep in Northern Ireland in 1930/31 was 32 per cent. below 1924/25, and fell to 64 per cent. below that level in 1932/33. A rise in 1934/35 to 50 per cent. below 1924/25 was followed by a slight decrease in 1935/36. Despite the increase in output, therefore, the income from sheep production has remained at a lower level than in 1924/25. For the six years under review it has averaged £464,000, as compared with £595,000 in 1925.

THE OUTPUT AND DISPOSAL OF POULTRY.

The trends in the production of poultry and eggs since 1925 can, as in the case of pigs, be best understood in relation to policy. Between 1924 and 1936 a series of Acts dealing with the marketing of eggs were passed through Parliament, with the objects of improving the quality and standards of Northern Ireland eggs, particularly for shipment to Great Britain, and of expanding the market for Northern Ireland eggs across the water. Recently a Marketing of Eggs Act has been passed which provides for the control of egg prices, and for a price structure under which prices vary according to the quality of the product. As a result of these measures there has been a remarkable expansion in the poultry industry since 1925.

The average output of poultry for the six years under review was 6,057,500, as compared with 3,385,000 in 1924/25. The output of poultry fell slightly between 1930/31 and 1931/32, when output was 5,343,000, but from that year a steady increase may be observed, output amounting to 6,690,000 in 1934/35, and falling only slightly by 150,000 in 1935/36.

Table 6 shows the output of each class of poultry; it may be seen that hens and chickens account for the bulk of the output, and that the increase in output has taken place mainly in this class of fowl.

TABLE 6. Output of Poultry.

		1924-25	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36
		000	000	000	000	000	000	000
Hens and chickens	(a)	2,788	4,754	4,726	5,229	5,688	5,939	5,835
Ducks	(b)	245	248	214	232	227	220	222
Turkeys	(b)	235	342	299	300	410	412	366
Geese	(b)	117	116	104	104	120	119	117
Total		3,385	5,460	5,343	5,865	6,445	6,690	6,540

(a) No. of birds at 1st June + 30% of the number of young birds at following 1st June—
No. of adult birds at following 1st June.

(b) No. of birds at 1st June — No. of adult birds at following 1st June.

The disposal of poultry is hard to assess. In the Annual Statement of Trade exports of poultry are shown mainly by weight, and no weights are available

for the various classes of poultry. Imports are shown by weight, and also numbers. Thus output, imports and exports cannot be related. It is apparent, however, from the table below that exports of poultry have increased since 1925. The average exports of dead poultry between 1931 and 1936 amounted to 148,858 cwt. as compared with 114,440 in 1925. Exports were lowest for these years in 1933, when they amounted to 128,000 cwt., but they rose from that year to 177,725 in 1936.

Exports and Imports of Poultry.

		1925	1931	1932	1933	1934	1935	1936
Exports :								
Dead (cwt.)	..	114,440	132,968	146,539	127,937	153,781	154,198	177,725
Live (head)	..	9,178	11,607	22,921	231	231	—	—
Imports :								
Dead (cwt.)	..	5,220	10,008	13,033	13,436	12,545	5,754	5,286
Live (head)	..	418,107	443,391	315,127	123,314	84,975	158,610	240,869

Imports have declined: the average imports of live poultry between 1931 and 1936 amounted to 227,714 head as compared with 418,107 in 1925. In 1934 they amounted to only 84,975, and rose from that year to 240,869 in 1936.

While it is impossible, with any degree of accuracy, to calculate net exports, a comparison of these trends indicates that (as might be expected in view of the expansion in output), net exports have increased very considerably.

The price of poultry stood in 1930/31 at 82 per cent. of the average for 1924/25, and dropped to 70.1 per cent. in 1932/33. A further fall to 60.5 per cent. in 1933/34 was followed by a rise to 69.5 per cent. in 1935/36. Thus while output has increased by as much as 100 per cent. between 1924/25 and 1930/31, the value of the output increased by only £227,000 between those years, and over the six years under review averaged £888,500. The income from poultry production was highest in 1931/32, when it amounted to £953,000, and after falling to £806,000 in 1933/34 it recovered somewhat to £940,000 in 1935/36.

THE OUTPUT AND DISPOSAL OF EGGS.

The average output of eggs from 1930 to 1935 was 4,288,000 great hundreds, or 20.8 per cent. above the 1925 output, which amounted to 3,550,000 great hundreds. A steadily upward trend is visible between 1930, when the output amounted to 3,969,000 great hundreds, and 1934 when it amounted to 4,610,000 great hundreds. In 1935 the output of eggs fell

slightly to, roughly, 4,500,000 great hundreds. Thus the output in 1934 and 1935 exceeded that of 1925 by 29 per cent. Table 7 shows the output and disposal of eggs during the calendar years 1930 to 1935. It may be seen that Northern Ireland produces not only all its own requirements of eggs, but also a large surplus for export to Great Britain, and between 1930 and 1935 an average of 1,909,000 great hundreds, or 44.5 per cent. of the total output, were disposed of in this way. Since 1930 the quantity of eggs consumed in Northern Ireland has fluctuated around a mean of 2,379,000 great hundreds. Net exports, on the other hand, have increased considerably, showing a steady upward rise from 1,508,000 great hundreds in 1930 to 2,398,000 great hundreds in 1935. In the latter year net exports exceeded those of 1925 by 71 per cent. This remarkable increase in sales of eggs to Great Britain is mainly due to the series of Marketing Acts to which attention has been drawn above.

TABLE 7. Output and Disposal of Eggs.

Year	Production			Output	Net Exports	Consumed in N.I.
	Hen	Duck	Total			
	(a)	(b)		(c)	(d)	
1925	3,333,500	272,000	3,605,500	3,550,000	1,400,000	2,150,000
1930	3,392,000	233,000	4,125,000	3,969,000	1,508,000	2,461,000
1931	3,863,000	231,000	4,194,000	4,035,000	1,715,000	2,320,000
1932	4,023,000	222,000	4,245,000	4,167,000	1,783,000	2,384,000
1933	4,281,000	218,000	4,499,000	4,421,000	1,867,000	2,554,000
1934	4,473,000	215,000	4,688,000	4,610,000	2,183,000	2,427,000
1935	4,395,000	195,000	4,590,000	4,525,000	2,398,000	2,127,000

(a) (No. of adult fowls at 1st June—20% cockerels) $\times$ 118 eggs per hen in 1925 and by 122 in 1930 to 1935

(b) (No. of adult ducks—12½% drakes) $\times$ 85.

(c) Total production of Hen and Duck eggs—hatching eggs (1½% of total production for hens and 2% for ducks).

(d) Includes liquid eggs.

The average price of eggs marketed in Northern Ireland fell steadily from 1930 to 1934. In 1930 the average price of eggs was only 70 per cent. of the 1925 figure, and it fell to 56 per cent. in 1934, rising to 61 per cent. in 1935. As a result of the sharp price fall the gross income from egg-production, despite the increase in output, averaged £2,046,000 in the six years under consideration, or 74.3 per cent. of the 1925 figure, which amounted to £2,755,000. The value of the output fell steadily to 1932, amounting in that year to £1,935,000, but increased thereafter to such an extent that by 1935 the gross value was little short of the 1930 level.

THE OUTPUT OF WOOL.

Little need be said about the output of wool since it represents on the average only 0.4 per cent. of the gross value of the output from Northern Ireland farms. As a result of the increase in sheep population between 1924/25 and 1930/31 the output of wool was, in the latter year, 42 per cent. above that of the former. Between 1930/31 and 1935/36 it averaged 1,987,500 lbs. The value of the output fell sharply from £58,500 in 1924/25 to £31,000 in 1930/31, and in 1932/33 it was only £17,000. From that year onwards it steadily increased to £39,000 in 1935/36.

THE OUTPUT OF FEATHERS.

Like wool, the output of feathers is a very small item in the agricultural income of Northern Ireland. The average output in the six years under review is estimated at 4,850 cwts., as compared with 4,073 cwts. in 1924/25. The value of the feathers declined from £25,000 in 1925 to £18,000 in 1933/34; owing to the increase in output in 1934/35 and 1935/36 it recovered somewhat to £23,000 in the latter year.

THE OUTPUT OF MILK AND DAIRY PRODUCE.

The importance of milk and dairy produce in the rural economy of Northern Ireland may be judged from the fact that in 1924/25 they accounted for 20 per cent. of the farmers' income, and on an average of the years 1930/31 to 1935/36 approximately 21 per cent.

At the census of production of 1924/25 the average lactation yield was estimated at 407 gallons per cow. The milch cow population at the beginning of the year was 236,664, and the total production in that year was estimated at 98,000,000 gallons. In the census of 1930/31, when the average number of cows in the country was 235,470, the total production of milk, as ascertained by the Royal Ulster Constabulary was 105,000,000 gallons, from which it appears that the average lactation yield was 446 gallons per cow. In estimating production in succeeding years this yield has been applied to the average number of cows in the country. Production is thus assumed to vary in proportion to the number of cows, and is shown in column 1 of Table 8. The milch cow population increased steadily from 1930, when there were 234,025 cows in the country, to 1935 when they numbered 252,297. The number decreased slightly between 1935 and 1936. Since the Marketing of Dairy Produce Act became law in 1931 all creameries in Northern Ireland have sent returns to the Ministry of the quantities of milk purchased by them each year. These figures are shown in Table 8, and it appears that the amount of milk sent to creameries in 1930/31 exceeded the 1925 figure by 4,000,000 gallons. After falling slightly in 1931/32, it rose steadily to

18,394,000 in 1933/34. Provision was made under the Milk and Milk Products (N.I.), 1934, Act for financial assistance to creameries as from April 1, with the object of raising the average price of milk sold for manufacture to 6d. per gallon in winter, and 5d. per gallon in summer, and consequently the quantity of milk sent to creameries rose to 20,154,000 gallons in 1934/35, and 24,841,000 gallons in 1935/36. Thus sales of milk to creameries in 1935/36 exceeded those in 1933/34 by 35 per cent., and those of 1925 by no less than 74 per cent.

TABLE 8. Production and Disposal of Milk.

Year	Estimated Production	Sent to Creameries	Converted into Butter on farms	Fed to Calves (h)	Consumed as whole milk
	000 gallons	000 gallons	000 gallons	000 gallons	000 gallons
1925	(a) 98,000	14,250	(d) 41,750	8,200	30,000
1930-31	(b) 105,000	18,338	(d) 41,740	7,800	30,000
1931-32	(c) 108,000	17,366	(e) 41,740	8,000	29,500
1932-33	(c) 110,000	18,032	(e) 41,740	8,200	30,000
1933-34	(c) 111,000	18,394	(e) 41,740	8,300	30,000
1934-35	(c) 112,000	20,154	(f) 40,500	8,400	30,500
1935-36	(c) 112,000	24,841	(g) 28,000	8,300	30,500

(a) Average lactation yield—407 gallons per year.

(b) Ascertained at Census at June 1 of that year.

(c) Average lactation yield—446 gallons per year. (Average rate for 1930-31—446 gallons.

(d) Ascertained at Census at June 1 of that year.

(e) As in 1930-31.

(f) Quantity of milk used for farm butter in 1933-34, reduced by the amount of the increase in Creamery supplies between 1933-34 and 1934-35—1,132 million gallons.

(g) Ascertained at Census at June 1, 1937 and adjusted for 1935/36.

(h) At 40 gallons per calf born.

The quantity of butter produced on farms was ascertained in 1924/25, 1930/31, and 1936/37, and the figures are given below, together with their milk equivalent calculated on the assumption that 1 lb. of butter equals 2.9 gallons of milk.

	Quantity of Butter Manufactured on Farms (1)	Quantity of Milk equivalent to (1) (2)
	lb. (000)	galls. (000)
1924/25	14,000	41,750
1930/31	14,000	41,740
1936/37	9,500	27,550

It will be seen that the quantity of milk used for the manufacture of butter on farms was approximately the same in 1930/31 as in 1924/25, but in 1936/37 the quantity so utilized had decreased by one-third. This decrease in farm butter manufacture coincides with the increase in the quantity of milk sold to creameries which has already been noted, and it is probable that in 1934/35 and 1935/36, owing to the relatively high return guaranteed to creamery suppliers under the Milk and Milk Products Act (Northern Ireland) 1934, a considerable proportion of milk formerly used for the manufacture of butter on farms was deflected to the creameries.

In making estimates, therefore, for the period 1930/31 to 1935/36 it has been assumed that the quantity of butter manufactured on farms remained constant for the years 1930/31 to 1933/34. In 1934/35 this quantity has been reduced from 41,740,000 gallons to 40,500,000 gallons, by approximately the amount of the increase in creamery supplies. For 1935/36, the production of butter on farms has been assumed to be approximately the same as in 1936/37.

The average price of farm butter in 1930/31 was 82 per cent. of the 1924/25 figure, and decreased steadily until in 1934/35 it was no more than 57 per cent. of the price in the first census year. It rose slightly in 1935/36 to 59 per cent. of the level of that year. This severe fall in the price of farm butter, accompanied by a decrease in production of 33 per cent. between 1925 and 1935/36, has resulted in a considerable diminution in income from this source. The average income from farm butter production between the years 1930/31 and 1935/36 was £627,000, as compared with £986,000 in 1924/25. This source of income was falling steadily between the years 1930/31 and 1935/36, and in the latter year it was only £399,000 as compared with £839,000 in the former. The contraction of income from this source has been to some extent offset by higher returns and increasing supplies at creameries. The average realised price of milk sold to creameries in 1930/31, that is to say, the price which creameries were able to pay without State assistance, was 4.37d. or 60 per cent. of the 1925 level, and it fell steadily to 3.1d. in 1934/35, or 42.5 per cent. of the price in the first census year, rising to little under 4d. a gallon in 1935/36. It has already been pointed out that under the Milk and Milk Products Act (N.I.), 1934, assistance was given to the creameries with the object of raising the price of milk sold to creameries for manufacture to 5d. a gallon in summer, and 6d. a gallon in winter. In addition to this measure of assistance, the funds for which have been provided by the Imperial Government, producers who found it necessary to sell their surplus milk of Grades A, B or C to creameries were granted bonus payments amounting to 2d. per gallon of Grades A and B milk, and 1d. per gallon on Grade C milk over and above the guaranteed average price. Thus the actual income from sales to creameries in 1934/35 and 1935/36 was made up as follows:

	1934/35	1935/36
Paid by Creameries*	£274,100	£428,633
Equalisation Payments	£179,094	£127,763
Bonus Payments	£3,982	£27,528
Total	£457,176	£583,924

Notwithstanding the increase in supplies to creameries between 1924/25 and 1930/31, the income from sales to creameries in the latter year was some £100,000 less than in the former. In 1933/34 this source of income was no more than £230,000, or 55 per cent. of the 1924/25 level. The amount paid by creameries to suppliers in the following years increased to £274,000 in 1934/35 and £429,000 in 1935/36; but taking account of State assistance, which has been noted above, it may be seen that in 1935/36 the gross income from sales to creameries exceeded the corresponding figure for 1931 by as much as £250,000, or 75 per cent., and that for 1924/25 by £151,000 or 35 per cent.

The liquid consumption of milk was estimated in 1925 at 30,000,000 gallons, but no precise information is available in subsequent years as to the liquid consumption of milk in Northern Ireland, and estimates from 1930 to 1936 have been made on the basis of the per capita estimate for 1925, viz., 24 gallons per head per year. The value of milk consumed fresh appears to have remained stable between 1924/25 and 1930/31, but to have increased by £212,000 between 1930/31 and 1931/32. In respect of the former two years, however, no allowance was made, in the absence of data, for the fact that producer retailers receive a higher rate of return than wholesalers. Statistics provided in connection with the Milk and Milk Products Act appear to show that approximately 5½ million gallons of milk were sold by producer retailers in 1935/36, and this figure has been adopted for the years 1931/32 to 1933/34, and valued at the average retail prices. This accounts for the apparently higher level of income from milk consumed fresh between 1931/32 and 1932/33. The income from the output of whole milk reached its lowest point in 1933/34 at £1,395,000, but rose in 1934/35, the first year of the Milk Scheme, to £1,631,000, declining slightly in 1935/36 to £1,567,000. This decline is perhaps not a fair picture of the trend of income in the post-Scheme years. In the first contract year, December 16th, 1934, to August 31st, 1935, prices were fixed for two periods—winter and summer—and were at an appreciably higher level in the winter period than in the summer. In 1935/36, however, one price was fixed for the whole year. In order to compute the value of milk sales for the period June to May, it has thus been necessary in 1935/36 to average the relatively low summer price for 1935, not with a compensatory high winter price but with one which represented the average for the whole contract year 1935/36. A true picture of trends in income from the production of milk for liquid consumption in the post-Scheme years can only be got by comparing returns in the contract years.

* Creameries here includes prescribed undertakings.

PRODUCTION AND DISPOSAL OF CROPS.*

The income from the crop output of Northern Ireland represents on an average of the six years under review 18 per cent. of the total income from agricultural production.

WHEAT.—Wheat remains a comparatively unimportant crop in Northern Ireland, the gross value of its output between 1930/31 and 1935/36 being on the average only 1.4 per cent. of the total value of the output of all field crops, as in 1925/26.

TABLE 9. Production and Disposal of Wheat.

	Acreage.	Yield per acre.	Production.	Output.
	acres.	cwt.	cwt.	cwt.
1925	3,639	19.0	68,964	63,000
1930	4,523	20.2	91,450	85,000
1931	3,035	18.7	56,839	50,319
1932	3,260	19.9	65,015	52,699
1933	6,158	19.7	121,572	104,220
1934	8,676	22.4	194,520	176,386
1935	9,067	21.4	193,932	180,190

As may be seen from Table 9, the total production of wheat was only 56,839 cwt. in 1931, which is the lowest recorded figure for the province, but it rose consistently from that year to a figure of 194,520 cwt. in 1934, which constitutes the highest figure since 1919. This increase may be attributed to the encouragement afforded to wheat growers by the guarantee under the Wheat Act, 1932, of a standard price of 10/- per cwt. of millable wheat sold in the United Kingdom.

Output, as shown in Table 9, has been calculated by deducting from total production the quantity of wheat required for seeding the following year's crop (estimated at 2 cwt. per acre). Comparing these figures with the quantity of wheat on which deficiency payments have been made, it is interesting to observe that in the first two years of the subsidy only 45 per cent. and 65 per cent. of the production respectively was certified for receipt of subsidy. In 1934/35, however, the proportion of certified millable wheat increased to 84.7 per cent., decreasing somewhat to 78.0 per cent. in 1935/36. The comparatively small proportion of wheat certified for receipt of subsidy in 1932/33 and 1933/34 is probably accounted for by the fact that growers failed to take full advantage of the subsidy in the early years.

* In each table production acreage and yield relate to the year shown in the left-hand column. Output covers part of the one year and part of the next.

The value of the output of wheat fell to £15,000 in 1932/33, as compared with £41,000 in 1925/26, but subsequently rose consistently to £45,500 in 1935/36. Wheat growers received the following amounts in respect of subsidy during the cereal years 1932/33 to 1935/36:—

	£
1932/33	6,463
1933/34	19,244
1934/35	31,281
1935/36	25,376

OATS.—The acreage under oats accounted for 30 per cent. of the acreage under field crops between 1930 and 1936, as compared with 30 per cent. in 1925. The value of the output of oats, however, represented only 5.1 per cent. of the total value of field crops, and 0.94 of the value of the gross output in the period under review.

The average production of oats between 1930 and 1936 was 5,297,706 cwt., as compared with 5,476,670 cwt. in 1925. It reached its lowest figure for the six years in 1931, when it was only 4,522,086. As may be seen from Table 10 the bulk of the oats grown in Northern Ireland is retained on farms and used for feeding to animals, or for farm consumption, and between 1930 and 1936 an average of 92.1 per cent. of the total output was utilised in that way. The remainder is either milled or fed to non-agricultural horses. The quantity of oats milled in Northern Ireland in 1930 and 1935 was ascertained in the Census of Production enquiries of those years. From 1932 to 1934 the quantities of oats milled in mills employing more than ten employees were ascertained in connection with enquiries under the Import Duties Act, 1932.

The number of non-agricultural horses is returned annually by the Royal Ulster Constabulary.

Despite the decline in the number of non-agricultural horses in the country from 8,438 at the 1st June, 1931, to 7,911 at the 1st June, 1935, it may be seen that the sales of oats off Northern Ireland farms more than trebled between 1930 and 1935. Concurrently the quantities of oats milled increased from 275,000 cwts. to 351,000 cwts., while net imports of oats decreased from 378,000 cwts. in 1930 to an almost negligible quantity in 1935. The decline in the import of oats may be attributed to the imposition of duties on imports of oats as from November, 1932. The duty was raised from 10 per cent. in that month to 20 per cent. ad valorem in September, 1933, and to 3/- per cwt. as from January, 1934.

The price of oats fell by 45.4 per cent. between 1925/26 and 1932/33, and rose slightly to an average of 61.4 per cent. of the 1925/26 level in the period 1933/34 - 1935/36. In 1935/36 it was 40.6 per cent. below the 1925/26 level.

Owing, however, to increased output the income derived from this source increased from £51,000 in 1930/31 to £157,000 in 1934/35, declining slightly in 1935/36 to £148,000. (See Table 1, page 607).

BARLEY.—Barley is the least of the three main cereal crops, the average production in 1930-35 amounting to 39,374 cwt., as compared with 44,753 cwt. in 1925. It is estimated that about 50 per cent. of the barley produced, less the quantity required for seeding the following year's crop, is sold for distilling; the remainder is used for feeding to animals.

As may be seen from Table 11 the production of barley increased steadily after 1932, and in 1935 it was 63,518 cwts. as compared with 22,855 cwts. in the earlier year.

Barley prices fell consistently from 82 per cent. in 1930/31 to 71 per cent. in 1935/36 of the 1925/26 level, but owing to increased output the total value rose from £3,500 in 1932/33 to £9,000 in 1935/36.

TABLE 11. Production and Disposal of Barley.

Year	Acreage	Yield	Production	Estimated Output
	acres	cwt.	cwt.	cwt.
1925	2,317	19.3	44,753	33,000
1930	2,146	19.8	42,441	28,000
1931	1,469	18.3	26,863	12,000
1932	1,092	20.9	22,855	10,000
1933	1,483	20.1	29,852	12,000
1934	2,434	20.8	50,714	22,000
1935	3,106	20.4	63,518	28,000

POTATOES.—

The potato crop is by far the most valuable crop to Northern Ireland farmers, accounting for 64.5 per cent. of the total income from field crops between 1930/31 and 1935/36, as compared with 44.8 per cent. in 1925/26.

The average acreage under potatoes between 1930 and 1935 was 135,000, as compared with 154,000 in 1925, and it may be seen from Table 12 that the acreage during these years did not deviate by more than 5 per cent. from that mean; owing to variations in yield, however, the greatest variation in production is from 697,973 tons in 1931 to 1,125,824 tons in 1932.

The output of potatoes is calculated by adding estimated consumption of potatoes in Northern Ireland to net exports. In 1925 home consumption was estimated at 300,000 tons, and estimates for subsequent years have been based on this figure, allowance being made for changes in the population. Net exports in 1926 and 1930/31 have been computed by deducting gross imports (from the Irish Free State and from Great Britain) from gross exports (to the Irish Free State and Great Britain), and these figures have been supplied by the Ministry of Commerce.

TABLE 12. Production and Disposal of Potatoes.

	Acreage	Yield	Production	Net Exports	Consumed in Northern Ireland (c)	Output (d)	Used for feeding to animals & for seed
	acres	tons	tons	tons	tons	tons	tons
1925	154,384	7.6	1,167,759	(a) 180,000	300,000	480,000	687,759
1930	136,294	6.3	856,447	(a) 130,000	300,000	430,000	426,447
1931	134,205	5.2	697,973	(b) 146,000	296,000	442,000	255,973
1932	141,789	7.9	1,125,824	(b) 160,000	299,000	459,000	666,824
1933	139,021	6.8	948,641	(b) 135,000	302,000	437,000	511,641
1934	137,321	6.7	922,908	(b) 134,000	304,000	438,000	484,908
1935	129,015	6.9	886,679	(b) 243,000	305,000	548,000	338,679

(a) Imports and exports supplied by Ministry of Commerce.

(b) Quantity of potatoes licensed for export under the Marketing of Potatoes Acts 1928 and 1934.

(c) Consumption per head per year = 537.6 lbs.: estimate made in 1925.

(d) Output = Net exports + quantity used for human consumption in Northern Ireland.

Since 1930/31 it has been found convenient for this purpose to make use of figures provided under the Marketing of Potatoes Acts, 1928 and 1934, relating to the quantity of Northern Ireland potatoes licensed for export. This procedure disregards the quantity of imported potatoes which is consumed in Northern Ireland, but gross imports since 1931/32 have been very small, and the quantity of imported potatoes consumed in Northern Ireland may be neglected.

The average estimated output between 1930/31 and 1935/36 was 459,000 tons as compared with an output of 480,000 in 1925/26. The lowest output was in the year 1930/31 when prices were, however, substantially above the average for the six years under review. The highest output was in 1935/36 when 548,000 tons of potatoes were sold off farms or consumed at home, i.e., 89,000 tons above the six years' average.

The value of the potato crop averaged £1,440,333 per annum during the six years under review: prices have, however, been subject to violent fluctuations during the period, and after rising from 153 per cent. in 1930/31 to 207 per cent. in 1931/32, of the 1925/26 figure the average price fell steeply to 55 per cent. of that level in 1932/33. Thus the value of the crop was as much as £2,442,000 in 1931/32, 70 per cent. above the average for the period, while in the following year it amounted to only £677,000, or 53 per cent. below the average for the six years.

The potato trade showed no marked sign of recovery until 1934/35, and in the following year 1935/36, net exports were 54 per cent. above the average for 1930 to 1935, and the average price was 27 per cent. above the 1925/26 figure. The estimated value of the potato output in 1935/36 is £1,858,000. In the latter year a short crop in Great Britain coincided with short crops in the chief exporting countries, and the demand for Northern Ireland potatoes was consequently high.

FLAX.—

The output of flax accounted for 4.3 per cent. of the total output in 1925/26, and for 1.8 per cent. during the six years under review. While it is a traditional Northern Ireland crop, it is perhaps worth noting that it is not by any means as important in the crop economy as potatoes. The acreage and production of flax is shown in Table 13. The acreage under flax was some 9,279 acres less in 1930 than in 1925, and after that year declined considerably, recovering somewhat between 1933 and 1935.

TABLE 13. Acreage yield per acre and total production of Flax.

	Acreage	Yield per acre	Production
	Acres	Stones	Tons
1925	37,786	24.8	5,850
1930	28,507	30.1	5,363
1931	7,440	29.7	1,380
1932	6,093	30.1	1,145
1933	9,784	35.5	2,173
1934	15,676	37.5	3,677
1935	27,755	39.7	6,892

The price of flax in 1930/31 was only 45.4 per cent. of the 1925/26 price. It rose steadily in the following years until in 1934/35 it was as high as 90 per cent. of the 1925/26 figure. The value of the output of flax was £215,000 in 1930/31—only 33.7 per cent. of the 1925/26 estimate—and it fell as low as £74,000 in 1932/33. From that year it rose to £482,000 in 1935/36, when it was 75.5 per cent. of the 1925/26 level. It should be borne in mind, however, that the latter figure includes the value of re-scutched tow, which is not included in the estimates for the other years.

GRASS SEED.—

Grass-seed is the third most valuable crop in Northern Ireland, and between 1930/31 and 1935/36 the value of the output accounted for almost 16 per cent. of the income from field crops and 2.9 per cent. of the total agricultural income. The bulk of the output is sold to seed merchants by whom it is cleaned and resold to farmers in Northern Ireland and Great Britain. (See Cmd. 87, page 14). In 1933/34 output had reached the low figure of 382,000 cwt. or 65 per cent. of the 1924/25 figure, but in the following years owing to an increase in acreage output increased to 477,000 cwt. or 82 per cent. of 1924/25.

The value of the output in 1932/33 was less than half its value in 1924/25, but owing to a sharp rise in prices increased by 77.4 per cent. in 1932/33 and 1933/34. After rising still further to £488,000 in 1934/35 it fell again to £325,000 in 1935/36.

TABLE 14. Area, average yield per acre, and estimated total Production of Grass Seed.

Year	Perennial			Italian			Mixed Perennial & Italian			Crested Dogtail			Total	
	Area	Average yield per acre	Estimated Total Production	Area	Average yield per acre	Estimated total Production	Area	Average yield per acre	Estimated total Production	Area	Average yield per acre	Estimated total Production	Area	Estimated total Production
	Acres	Cwt.	Cwt.	Acres	Cwt.	Cwt.	Acres	Cwt.	Cwt.	Acres	Cwt.	Cwt.	Acres	Cwt.
1925	68,099	5.5	374,544	15,829	7.0	110,803	19,567	5.0	97,835	675	4.2	2,834	104,170	586,016
1930	64,141	6.1	389,703	13,267	6.5	85,731	13,121	5.8	75,951	967	4.4	4,252	91,496	555,637
1931	60,427	6.2	372,180	14,178	6.5	91,505	13,555	5.7	77,076	1,542	4.9	7,482	89,702	548,243
1932	56,170	5.6	312,998	10,870	6.0	65,710	10,341	5.4	55,360	1,769	4.9	8,687	79,150	442,755
1933	50,741	5.4	275,762	9,780	6.0	58,313	7,663	5.5	41,819	1,195	5.2	6,226	69,379	382,120
1934	53,596	6.2	334,431	11,345	6.8	76,882	9,673	6.0	58,138	1,337	5.1	6,768	75,951	476,219
1935	52,921	5.9	314,270	11,768	6.5	76,662	13,124	5.9	77,145	1,798	4.9	8,592	79,611	476,669

TOTAL FIELD CROPS.

The value of the output of field crops as a whole in each of these years may be seen from Table 1, page 607. It is interesting to observe that though there was a decline in total value between 1925/26 and 1930/31, field crops are valued in 1931/32 at £3,006,000, some £147,000 higher than the 1925/26 figure. This peak is explained by the exceptionally high income from potatoes, which accounted for 81.2 per cent. of the value of the total output of field crops in that year.

Field crops declined in value by 61 per cent. between 1931/32 and 1932/33, but the income from this source increased steadily after the depression of that year until it reached £2,938,500 in 1935/36, only £67,500 less than the high figure for 1931/32.

This increase in income from field crops between 1932/33 and 1935/36, like its earlier fluctuations, is attributable mainly to the increasing value of the potato output; the rising trend, however, is visible in wheat, oats and barley and flax, and there appears to have been a general expansion in the value of the crop output between 1932/33 and 1935/36.

SUMMARY AND CONCLUSIONS.

THE VALUE OF THE OUTPUT OF LIVE STOCK AND FIELD CROPS.

The total value of the output of live stock and field crops had substantially decreased between 1925 and 1930/31, when it amounted to about 86 per cent. of the 1925 level. Between 1930/31 and 1932/33 the gross income continued to shrink. The decrease was only slight in the second year, a fall of £724,500 in the value of the output of live stock being offset to some extent by a rise of £486,500 in the output of field crops. Indeed in 1931/32, on account of an exceptionally valuable potato crop, the income from field crops reached the high figure of three million pounds, and thus exceeded that of 1925. Between 1931/32 and 1932/33, however, the gross income from live stock and field crops decreased by no less than 17 per cent. The value of the live stock output declined only slightly, but the value of field crops, reflecting the fall in potato prices, dropped by one and three quarter million pounds to the low figure of £1,177,000. In 1932/33, accordingly, the value of the gross output reached its smallest proportions for this period. From that year, as a result, on the whole, of increasing output rather than rising prices, the gross income increased sharply, rising by over one and a quarter million pounds between 1933/34 and 1934/35, and by over two million pounds between the latter year and 1935/36.

If allowance is made for direct assistance afforded by the State during this period the gross income for the years 1932/33 to 1935/36 appears as follows :

	1932/33	1933/34	1934/35	1935/36
	£	£	£	£
Gross Value of Output ..	10,374,000	10,941,000	12,305,000	14,515,000
Direct Assistance from State	6,463	19,244	375,690	466,436
Gross Income ..	10,380,463	10,960,244	12,680,690	14,981,936

Thus, allowing for State assistance, the output from live stock products and field crops exceeded in 1935/36 the total output in 1925 (exclusive of fruit, vegetables and glass-house produce) by £175,436. It is interesting to observe that in 1934/35 and 1935/36 direct assistance from the State accounted for 3 per cent. of the total income during these years, and was little less in 1935/36 than the total value of the output of sheep in that year.

CHANGES IN THE BALANCE OF PRODUCTION.

As has already been pointed out, the proportions of the gross output attributable to live stock and live stock products on the one hand, and field crops on the other, have not varied considerably since 1925. Variations between 1930/31 and 1932/33 were produced by the sharp fluctuations in the value of the potato crop in those years, but in 1934/35 and 1935/36 live stock were produced in approximately the same proportion (by value) as in 1925. In view of the decline in the tillage area from 583,175 acres in 1925 to 476,803 acres in 1936 it might be supposed that crops would play a smaller part in farm income than in 1925. It should, however, be borne in mind that the value of the potato crop, which accounts for such a substantial proportion of the total income from field crops, was no less in 1935/36 than in 1925. Where the value of the potato crop has fluctuated the proportions attributable to live stock and field crops have been upset. Secondly, while the area under tillage has declined, yields have, on the whole, improved. Finally, an increasing proportion of the output of oats has been sold off farms, owing to the reduction in the imports of this cereal.

While, however, the balance as between live stock and crops has remained fairly constant, interesting changes have taken place in the proportions of the total value attributable to individual sections of the main branches of the industry. (See Table 15).

In 1925 cattle represented 23.6 per cent. of the total income, and were by far the most valuable branch of Northern Ireland production. Eggs were second at 18.6 per cent. Cattle and milk represented 43.3 per cent. of the total income, and poultry and eggs 23.3 per cent. Pigs had a relatively unimportant place at 9.4 per cent. From 1931/32 the income from pigs takes an increasingly important place in the gross income. From 9.1 per cent. in 1931/32, it increased steadily to 20.6 per cent. in 1935/36. Thus in 1935/36 pigs accounted for a larger proportion of the gross income than cattle, and as large a proportion as poultry and eggs together.

In the crop economy flax declined considerably in importance between 1925 and 1932/33, accounting for only 0.7 per cent. of the total output in 1932/33, as compared with 4.3 per cent. in 1925. It recovered after 1932/33 and in 1935/36 accounted for 3.3 per cent. of the total value of the output.

The potato crop, on the other hand, fluctuated in importance, representing no less than 19.5 per cent. of the gross value in 1931/32, and only 6.5 per cent. in 1932/33. In 1935/36 it reached 12.8 per cent.

TABLE 15.

The Value of the Output of each Class of Produce shown as a percentage of the Total Value.

[illegible]

GENERAL CONCLUSIONS.

Changes in the gross value of the output from year to year are not an exact index of agricultural prosperity. While the gross output contracted by 30 per cent. between 1925 and 1932/33, it should be borne in mind that the price of farm requisites fell substantially after 1925, and that this decrease in the cost of production mitigated to some extent the effect of falling farm prices.

Moreover, wholesale prices of industrial goods fell substantially, the Board of Trade index standing at 101 (base year, 1913=100), in 1933, as compared with 159 in 1925. Thus £63 10/- in 1933 would have purchased as much of a representative collection of wholesale goods, as £100 in 1925.

Both these factors made the farmers' lot less hard in the years 1932 to 1934 than one might be led to suppose by the decrease in farm income, but there is no doubt that farm profits, as well as the gross income from agricultural production contracted considerably between 1925 and 1932/33. Yet whatever reservations have to be made before drawing conclusions from these figures regarding the intensity of the depression, the reality of the recovery which took place after 1933/34 is evident. While costs of production and wholesale prices were still low, the gross agricultural income began to expand in 1934/35, and in 1935/36 it was not only almost 40 per cent. above the 1932/33 level but, if allowance is made for direct State assistance, it actually exceeded the gross income for 1925, when costs of production and wholesale prices were much higher.

It is interesting to compare trends in Northern Ireland agricultural output with trends first in agricultural output in England and Wales, and secondly with industrial output in Northern Ireland.

An index of changes in the value of the output in Northern Ireland and England and Wales respectively is shown in the table below. The figures exclude payments from the State direct to farmers.

Year	Northern Ireland.		England and Wales	
	£ (a)	Index	£ (a)	Index
1925	£000 14,807	100	£000 200,700	100
1930/31	12,770	86.2	175,470	87.4
1931/32	12,532	84.6	161,840	80.6
1932/33	10,374	70.1	157,670	78.6
1933/34	10,941	73.9	169,610	84.5
1934/35	12,305	83.1	177,780	88.6
1935/36	14,516	98.0	179,750	89.6

(a) Exclusive of fruit, vegetables and glass house produce.

It may be seen that while the gross agricultural income in Northern Ireland decreased in 1932/33 to 70 per cent. of the 1925 level, the income of farmers in England and Wales decreased to only 78.6 per cent. of the 1925 level. In the latter the income increased by 11 points between 1932/33 and 1935/36, amounting in the latter year to 89.6 per cent. of the 1925 figure. In Northern Ireland, however, income increased by 28 points between 1932/33 and 1935/36, and amounted in the latter year to 98 per cent. of the 1925 figure.

Thus it appears that the upward trend in Northern Ireland output has been considerably steeper than in England and Wales, and that relative to the position in 1925 Northern Ireland farmers, though worse off than English farmers in 1932/33 were substantially better off in 1935/36.

Another index has been constructed to compare trends in agricultural output with trends in industrial output in Northern Ireland. The latter particulars are taken from the Census of Production Reports issued by the Ministry of Commerce for Northern Ireland. The industrial figures relate to the calendar years 1924, 1930 and 1935, while the agricultural figures relate to the year ending May 31st. Moreover, the 1924 industrial figures cover all firms employing more than five workers, while those for 1930 and 1935 relate to firms employing more than ten employees. Neither of these reservations, however, seriously affects the comparability of the figures.

Year	Industrial Production		Agricultural Production	
	£ 000	Index	£ 000	Index
1924	67,332	100	14,807	100
1930	58,021	86	12,770	86.2
1935	58,847	87	14,982(a)	101.2

(a) Inclusive of receipts on account of the beef, milk and wheat subsidies.

From this table it appears that while industrial and agricultural production declined in value in roughly the same proportion between 1924/25 and 1930/31, the recovery in industry has been only slight compared with the agricultural recovery. Industrial production gained one point between 1930 and 1935, while the value of agricultural production (inclusive of direct State assistance under the cattle, wheat and milk subsidies) gained 15 points between these years.

While there appears to have been all round expansion in the agricultural industry, it is clearly no coincidence that the expansion has been most marked in those departments in which the Government have taken an active part in directing and assisting the industry.

TABLE I—AGRICULTURAL OUTPUT OF NORTHERN IRELAND, 1925, 1930/31 to 1935/36.

Live Stock and Live Stock Products—			1924-25	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36
Cattle	..	..	No. 247,448	173,420	149,964	170,429	156,999	162,751	221,695
	..	..	Value £ 3,496,000	2,477,000	2,096,000	2,177,000	1,976,000	2,028,000	2,562,000
Sheep	..	..	No. 205,226	261,493	360,949	383,391	350,626	321,859	366,151
	..	..	Value £ 595,000	515,000	487,000	403,000	435,000	467,000	476,000
Pigs	..	..	No. 176,000	250,000	263,000	293,000	375,000	517,000	664,000
	..	..	Value £ 1,399,000	1,437,000	1,141,000	1,236,000	1,796,000	2,343,000	2,995,000
Poultry	..	..	No. 3,385,000	5,460,000	5,343,000	5,865,000	6,445,000	6,690,000	6,540,000
	..	..	Value £ 700,000	927,000	953,000	850,000	806,000	856,000	940,000
Eggs (Hen and Duck)	..	..	Gt. hds. 3,550,000	3,969,000	4,035,000	4,167,000	4,421,000	4,610,000	4,525,000
	..	..	Value £ 2,755,000	2,167,000	2,029,000	1,935,000	2,011,000	1,987,000	2,147,000
Wool	..	..	lb. 1,410,000	2,000,000	2,000,000	2,025,000	1,875,000	1,950,000	2,075,000
	..	..	Value £ 58,500	31,000	31,500	17,000	27,500	34,500	39,000
Feathers	..	..	cwt. 4,073	3,134	4,919	4,776	4,766	5,889	5,638
	..	..	Value £ 25,000	23,000	22,000	20,000	18,000	20,000	23,000
Milk and Dairy Produce : Milk (whole)	..	..	gallons 30,000,000	30,000,000	29,500,000	30,000,000	30,000,000	30,500,000	30,500,000
	..	..	Value £ 1,500,000	1,500,000	1,712,000	1,620,000	1,395,000	1,631,000	1,567,000
Milk converted into butter and cream	..	..	gallons 56,000,000	60,078,000	59,106,000	59,772,000	60,134,000	60,174,000	52,391,000
	..	..	Value £ 1,419,000	1,173,000	1,054,000	939,000	822,000	830,000	828,000
Total Live Stock and Live Stock Products	..	..	Value £ 11,947,500	10,250,000	9,525,500	9,197,000	9,286,500	10,196,500	11,577,000

TABLE 1—Continued

		1924-25	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36
Field Crops—	..							
	Wheat	..	..	..	..	..	..	..
	..	63,000	85,000	50,000	53,000	104,000	176,000	180,000
	Value	£41,000	£37,000	£21,500	£15,000	£25,000	£43,500	£45,500
Oats	..	380,000	172,000	255,000	430,500	526,000	570,000	573,000
	Value	£165,000	£51,000	£99,500	£102,000	£131,500	£157,000	£148,000
Barley	..	33,000	28,000	12,000	10,000	12,000	22,000	28,000
	Value	£15,000	£10,500	£4,000	£3,500	£4,000	£8,000	£9,000
Potatoes	..	480,000	430,000	442,000	459,000	437,000	438,000	548,000
	Value	£1,280,000	£1,750,000	£2,442,000	£677,000	£862,000	£1,053,000	£1,858,000
Flax	..	5,850	5,360	1,380	1,150	2,175	3,675	6,900
	Value	£638,000	£215,000	£77,000	£74,000	£152,000	£293,000	£482,000
Hay	..	33,500	21,000	19,500	20,000	20,000	19,000	18,000
	Value	£130,000	£54,000	£50,000	£53,000	£48,000	£49,000	£52,000
Straw	..	50,000	22,000	20,000	18,000	16,000	17,000	19,000
	Value	£50,000	£22,000	£20,000	£18,000	£16,000	£17,000	£19,000
Grass Seed	..	586,000	555,000	548,000	443,000	382,000	426,000	477,000
	Value	£540,000	£380,000	£292,000	£234,500	£416,000	£488,000	£325,000
Total Field Crops	..	£2,859,000	£2,519,500	£3,006,000	£1,177,000	£1,654,500	£2,108,500	£2,938,500
Total Live Stock & Live Stock Products & Field Crops	£	£14,806,500	£12,769,500	£12,531,500	£10,374,000	£10,941,000	£12,305,000	£14,515,500
State Subsidies—								
	Wheat	..	..	..	6,463	19,244	31,281	25,376
	Milk	..	..	..	..	..	183,076	155,291
	Cattle	..	..	..	..	..	161,333	285,769
Total Subsidies	..	..	..	..	6,463	19,244	375,690	466,436
GRAND TOTAL	..	£14,806,500	£12,769,500	£12,531,500	£10,380,463	£10,960,244	£12,680,690	£14,981,936

EMPIRE EXHIBITION, SCOTLAND, 1938.

The Ministry's plans in connection with the Empire Exhibition, Scotland, 1938, which is to be opened by His Majesty the King, at Glasgow, early in May, are now developing satisfactorily. In the main the Ministry's efforts will be devoted to co-operation with the Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland in a combined United Kingdom Marketing Exhibit.

This marketing exhibit will be staged in the pavilion which is devoted to Agriculture, Fisheries and Forestry. The separate stands of the three Departments participating in the joint exhibit will be linked together by a common fascia indicating that the separate items make up an exhibit of United Kingdom marketing as a whole. The construction of the stands and fascia has been entrusted to the well-known firm of Messrs. T. Robinson, Ltd., of The Ark, Liverpool, which has so high a reputation for work of this nature, and Mr. Robinson has succeeded in his plans in giving a remarkable continuity to the three individual stands.

The stand of the Ministry of Agriculture for Northern Ireland will contain exhibits which it is believed will be of the greatest interest to all classes of visitors to the Exhibition, and if this object is secured the attention of some twelve million people will be directed to the agricultural production of Northern Ireland.

Possibly the most attractive features of the Ministry's display will be two mechanical models, one devoted to egg production and marketing, and the other to the important bacon and ham industry of Ulster. In addition, there will be a new type of automatic photographic display cabinet in which sets of illuminated photographs will be displayed dealing with other aspects of Northern Ireland agricultural production, such, for example, as fruit, potatoes and creamery produce. A central feature of the stand will be a display of representative produce, and included as a background to this display there will be a coloured map of Ulster, on glass, illuminated from behind, showing among other things the very adequate communications which exist with Great Britain.

A very important feature of the display will be a painted frieze which will run around the top of the interior walls of the stand. This frieze is being prepared by Messrs. Morrow & Geelan, of Belfast, a well-known firm of commercial artists. The frieze will depict different phases of agricultural life in the Province, and as it will be adequately floodlit it should form a very attractive feature.

The Ministry will, of course, maintain at the stand during the six months' period of the Exhibition a small staff for the purpose of giving to persons interested full details of Northern Ireland agricultural production.

Apart from this purely marketing display the Ministry is co-operating in the Research and Educational Exhibit which will form another feature of the United Kingdom Agricultural Pavilion. The Ministry's contribution to this exhibit will consist of a display dealing with the flax-growing industry which is so important a feature of Northern Ireland agriculture. In addition, the Ministry will stage a display relating to the Northern Ireland oat crop and the improvements which have in recent years been secured in that crop.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934.

PIGS MARKETING BOARD

ELECTION OF MEMBERS BY REGISTERED PRODUCERS IN THE COUNTIES ANTRIM, ARMAGH, AND DOWN.

The counting of votes was made on the 2nd, 3rd and 4th March, 1938, and resulted as follows:—

County Antrim :		No. of Votes
*A. A. McGuckian, Cloughmills	..	2,686
*J. K. McElderry, Ballymoney	..	2,068
*Robert Allen, Crevillyvalley, Shankbridge, Ballymena ..	..	1,836
John Stirling, Ross, Kells, Ballymena	..	1,783
Wm. Simpson (R.D.C.), Killycoogan, Portglenone ..	..	1,320
James A. Gaston, The Glen, Glarryford	..	1,194
Samuel Gray, Shaneoguestown, Dunadry	..	555
Gawn Graham, Carncomb, Kells	..	498
County Armagh :		
*James Graham, Derryane House, Derrylea	..	1,034
Michael Tierney, Lathbirget, Mullaghbawn	..	1,020
John McClelland, Lisavague Mills, Tanderagee	..	570
County Down :		
*A. E. Swain, New Orchard, Moira	..	2,231
*Capt. T. H. Wallace, M.C., LL.B., J.P., Bishop's Court, Dromore	..	2,101
Charles Magee, Carnmeen House, Newry	..	1,242

The six persons whose names are marked by an asterisk were declared elected.

PIG INDUSTRY COUNCIL

FORTHCOMING ELECTION OF MEMBERS

An election of members to the Pig Industry Council by licensed bacon curers will be held not later than the 31st of May. The members will be elected by bacon curers licensed at 1st January, 1938, and for the purpose of the election each bacon curer will receive a number of votes equivalent to the number of pigs put into cure by him during the twelve months ended 31st December, 1937. Candidates for election will require to be nominated in

writing, which must be signed by 2 persons as proposer and seconder, and by at least 8 other persons as assenting to the nomination. The proposer and seconder, and each of the assentors must be licensed bacon curers. The nomination papers, when completed, are to be sent by registered post to the Secretary, Ministry of Agriculture, Stormont, Belfast, so as to arrive not later than 16th April, 1938.

PIG PRICES FOR MARCH, 1938.

The following announcement has been made by the Pig Industry Council.

PRICES FOR DEAD PIGS.

The prices per dead cwt. for dead pigs sold by producers to curers in Northern Ireland in March, 1938, are as follows:—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Partly Black Pigs.
c.1.0.21 to c.1.1.13	66/11	63/11	60/11	56/11	5/- below relevant Grade Price.
c.1.1.14 to c.1.2.3	70/11	67/11	64/11	60/11	
Weight Class. (Dead Weight)	Grade A.	Grade B.	Grade C.	U.L. or U.F.	
c.1.2.4 to c.1.2.14	70/11	67/11	64/11	61/11	
c.1.2.15 to c.1.3.14	70/11	67/11	64/11	61/11	
c.1.3.15 to c.2.0.0	67/11	64/11	61/11	58/11	
c.2.0.1 to c.2.0.14	61/11	58/11	55/11	52/11	

Pig Carcases c.1.0.0 to c.1.0.20 :—63/11

The standard dead pig price (Grade B, wt. cl. 2) is the same as that for February, 1938

Authorised cuts:—

- Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.
- Broken ham (wet break)—12½% of the gross value of the carcase.
- Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase is condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer, the appropriate grade price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply. If the carcase is wholly condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer the relevant Grade 2 or Grade B price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcasses weighing under c.1.0.0 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before despatch by the producer and subsequently condemned; emaciated or screw pigs; smelling pig carcasses with definite indications of putrefaction, and pig carcasses badly abused or damaged before being handed over by the producer to the curer.

PRICES FOR WILTSHIRE PIGS SOLD ON DIRECT CONTRACT.

In the case of pigs sold alive under direct contract to Wiltshire curers the prices per dead cwt. payable for pigs delivered in respect of the month of March, 1938, are as follows:—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Unsuitable.
c.1.0.21 to c.1.1.13	76/11	73/11	70/11	66/11	63/11
c.1.1.14 to c.1.2.3	76/11	73/11	70/11	66/11	63/11
	Grade A.	Grade B.	Grade C.	U.L. or U.F.	
c.1.2.4 to c.1.2.7	73/11	70/11	67/11	64/11	
c.1.0.0 to c.1.0.20	Suitable 65/11			Unsuitable 63/11	
Over c.1.2.7	On the same basis as pigs sold dead.				

PRICES FOR LIVE PIGS SOLD TO THE PIGS MARKETING BOARD (NORTHERN IRELAND).

In the case of pigs sold alive to the Pigs Marketing Board during March, 1938, the prices per live cwt., according to grade, are as follows:—

Live Weight.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.
c.1.1.14 to c.1.2.13	49/6	49/6	49/6	48/-
c.1.2.14 to c.2.0.0	57/9	55/6	53/3	U.L. or U.F. 50/3 48/-
c.2.0.1 to c.2.1.14	53/3	51/-	48/9	46/6
c.2.1.15 to c.2.2.7	51/-	48/9	46/6	44/3
c.2.2.8 to c.2.2.21	46/6	44/3	42/-	39/9

These prices do not apply to live pigs under c.1.1.14 or over c.2.2.21, live pigs intended for breeding, live boars, live sucked sows, rigs or stags,

injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside the weights c.1.2.0. to c.2.2.21 can be sold only to the Board.

AUTHORISED DEDUCTIONS.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy at present amounting to 1/-.

In addition to this amount, a deduction of 4d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

GRADING STATISTICS.

Table showing the percentages of pig carcasses falling within the weight and grade classes indicated during January, 1938.

Under c.1.0.21		c.1.0.21 to c.1.1.13					c.1.1.14 to c.1.2.3					Totals
Suitable	Un-suitable	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	
1.22	.17	2.26	1.53	.48	.27	.02	3.86	4.93	2.44	1.27	.03	
18.48												
Grade A.				Grade B.				Grade C.				76.84
1	2	3	4	1	2	3	4	1	2	3	4	
7.22	18.96	4.19	.96	6.14	19.80	5.54	1.91	2.14	8.03	1.54	.41	
Ungraded Carcases.												4.68
Under Grade A measurements. U.L.	Over Grade C measurements U.F.	Wholly condemned U1.	Wholly black, injured or damaged U2.	Overweights, boars, sows, etc. X.	Partly Black Y.							
.05	2.74	.04	.55	1.28	.02							
Total						100%						

These figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry.

During January the volume of trade in pig carcasses suffered a further slight reduction. The average price per carcase was 1/11d. cheaper at £5 12s. 8d., and the average price per cwt. declined by 5d. to £3 6s. 4d. The average weight was 2 lbs. lighter at c.1. 2qr. 22lb.

The following table gives the percentage results of an analysis of the purchase and grading statements furnished by Wiltshire Bacon Curers in respect of live pigs delivered on direct contract by producers during the month of January, 1938.

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable U.L. or U.F.	Total
Under c.1.0.0 ..					
c.1.0.0 to c.1.0.20 ..					2.91
c.1.0.21 to c.1.2.3 ..	61.00	26.14	5.39	2.49	95.02
	Grade A.	Grade B.	Grade C.		
c.1.2.4 to c.1.2.7 ..	1.66	.41	—	—	2.07
c.1.2.8 to c.1.3.14					
				TOTAL	100.00

The average net price per cwt. in respect of these deliveries works out at £3 14s. 2d. after making allowance for insurance and contribution to the Pigs Marketing Board.

The average weight works out at c.1.1.16, the net average price per pig being £5 3s. 3d.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks' period ended 19th February, was 10/3½d. This figure has been calculated by the Ministry from returns collected from 10 representative centres in Northern Ireland.

The following is the ration upon which the feeding cost is based:—

Maize Meal	...	...	30%
Barley Meal	...	...	30%
White Pollards	...	...	20%
White Bran	...	...	10%
Meat Meal (60% Protein)	...	...	10%

WHEAT ACT, 1932.

ADVANCE PAYMENT TO REGISTERED GROWERS FOR 1937/38.

The Wheat Commission has recently made an advance payment to 63,200 registered growers. This payment at the rate of 8d. per hundredweight (3s. 0d. per quarter) is in respect of 13,787,000 hundredweights (3,064,000 qrs.) of wheat vouched for by 100,700 wheat certificates delivered to the Commission between 1st August, 1937, and 27th January, 1938. The aggregate amount of the advance is approximately £459,500. Such balance as may become due will be paid in September, 1938.

A further 1,550 payments, aggregating £16,300 will be made as soon as possible in those cases where, owing to the death of a registered grower, or for some other reason, the Commission have had to investigate the title of persons claiming deficiency payments.

The question of making an advance payment to growers in respect of wheat certificates delivered after 27th January will be considered by the Commission later in the year.

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935 AND THE LIVESTOCK INDUSTRY ACT, 1937.

The following is a summary of payments made under these Acts up to and including 26th February, 1938.

Live Weight	Number of Animals	Total Amount paid		
		£	s.	d.
England and Wales	.. 3,862,200	9,214,915	14	1
Scotland ..	.. 1,166,438	2,932,366	8	6
Northern Ireland	.. 409,605	855,546	6	6
Total (United Kingdom)	.. 5,438,243	13,002,828	9	1
Dead Weight				
England and Wales	.. 125,114	314,236	19	10
Scotland ..	.. 36,598	101,424	6	7
Total (Great Britain)	.. 161,712	415,661	6	5

NUMBERS CERTIFIED FOR SUBSIDY.

The numbers of fat cattle certified for payment of subsidy, published by the Livestock Commission in respect of the month of January, 1938, are shown hereunder.

January, 1938						Corresponding totals in	
Home-bred		Imported		Total		Jan., 1937	Jan., 1936
Ordinary Grade	Quality Grade	Ordinary Grade	Quality Grade				
England ..	35,332	28,645	9,621	12,666	86,264	91,386	89,950
Wales ..	5,867	1,627	173	143	7,810	9,086	9,037
Scotland ..	3,480	15,786	937	9,527	29,730	29,448	30,779
Northern Ireland	7,440	1,025	574	157	9,196	12,383	13,794
United Kingdom	52,119	47,083	11,305	22,493	133,000	142,303	143,560

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

As seeding time has arrived it will be the farmer's first concern to lose no opportunity of pushing ahead with the work of preparing the land for sowing and planting. Turnips and pits of potatoes still in the fields should be lifted now so that the ground may be ploughed in good time.

LIMING.—The best time in the rotation to apply lime is before the land is sown out to grass. Accordingly, farmers are strongly advised to take advantage of the Land Fertility Scheme and obtain supplies of lime at half the usual cost for application to land being laid down in grass this spring. A dressing of from 1 to 2 tons per statute acre of freshly-burnt lime is recommended. The lime should be applied on top of the ploughed ground about a fortnight before the oats or barley and the seeds mixture are sown. A convenient method of applying lime to such land is to place it in small heaps over the field and to cover the heaps with a layer of soil. In a few days' time the lime will be reduced to a fine powder, when it can be scattered evenly over the ground with shovels. The subsequent crops, particularly the pasture, will benefit considerably from the lime thus applied, and since the cost is low this opportunity of increasing the output from the land at a small expenditure should be taken.

Lime is also valuable as a preventive of "finger and toe" or "club-root" disease in turnip and cabbage crops, and, where attacks of this disease are liable to occur, additional supplies of lime should be obtained for application to ground intended for growing these crops. A dressing of about 2 tons per acre of burnt lime is recommended for this purpose. The lime should be applied after the ground has been ploughed for the last time.

POTATOES.—Where soil conditions are suitable, early varieties of potatoes may now be planted. To obtain good crops which will be ready for digging early in the season, well-sprouted seed of a reliable early variety, and suitable manuring, are necessary.

The standard mixture of artificial manures, namely 1 cwt. sulphate of ammonia, 4 cwt. superphosphate, and 1 cwt. muriate of potash, along with about 15 tons farmyard manure per acre, is suitable for the production of early varieties. Under certain circumstances, as for example, where early potatoes are grown for sale on the early potato market, a dressing of 8 or 9 cwt. per acre of the mixture of artificial manures may be justified. This mixture gives equally good results as ready-mixed proprietary manures, which are usually more expensive than the standard mixture made up on the farm. Moreover, the manures comprising the standard mixture can be mixed for a period up to three weeks prior to application without impairing the efficiency of the mixture in any way. The mixing of the manures can, therefore, be undertaken during wet days, and valuable time when the crop is being planted can thus be saved by having the mixture ready beforehand. Furthermore, any surplus of the mixture not required for early varieties can be used for application to crops of later varieties. Lime should not be applied to the ground intended for potatoes, as it tends to encourage the appearance of corky scab on the tubers.

BARLEY.—The importance of growing barley, particularly by those farmers engaged in pig-keeping may again be emphasised. Barley is not a difficult crop to grow, and the results of experiments have shown that satisfactory yields can be obtained on the average classes of soils in Northern Ireland. Varieties such as Spratt-Archer and Old Common (Chevallier) have been found to be suitable for Northern Ireland conditions. Since the best crops of barley have been obtained on soils which are well supplied with lime a dressing of from 1 to 2 tons per acre of burnt lime should be applied on top of the ploughed ground about a fortnight before sowing the seed, if the land has not been limed recently. When barley is being grown on potato and turnip land liming is far more necessary than manuring. Further information on the growing of barley is given on page 623.

OATS.—Where soil conditions are suitable, oats may be sown on lea ground towards the end of March. Early sowing encourages early ripening and thus facilitates harvesting. To obtain best results a suitable variety for the particular soil conditions on the farm should be chosen. If advice as to the most suitable variety to sow is desired the Agricultural Instructor for the district should be consulted.

Seed oats should be dressed with a fungicide, such as "Ceresan" or "Agrosan G" prior to sowing to prevent the appearance of such seed-borne

diseases as smut and leaf stripe. The treatment of the seed with these dusts encourages thicker brairds and leads, in many cases, to increased yields. From 5 to 8 ounces of the fungicide should be thoroughly mixed with each cwt. of seed in a disused end-over-end churn or other suitable container. As these dusts are poisonous, precautions should be taken to prevent the dusts from being inhaled by the persons dressing the seed. If mixing is done in a closed house a damp handkerchief should be worn over the nose and mouth, if a proper gas mask is not available. The materials themselves, and the dressed grain, should not be left where farm livestock and poultry have access to them. Sacks in which treated grain has been stored should not be used for meals or for other foods intended for stock feeding.

As thicker brairds are usually produced from treated than from untreated seed sown at similar rates, the customary rate of seeding may be reduced by about one quarter when treated seed is sown, as otherwise the crop may grow too thickly and the straw may be short.

Proper manuring of oats is also necessary on most soils to obtain heavy yields. Suitable mixtures of artificial manures for oats are given on page 627.

WHEAT.—Where it is intended to sow spring wheat, the importance of early sowing may again be stressed. The choice of varieties of spring wheats is very limited, and it is essential that a suitable spring variety be obtained. For sowing during March the varieties known as Red Marvel and Red Fife are suitable, while for later sowing April Red Bearded is the only variety which can be relied on to produce a properly ripened crop. Seed wheat should also be dressed with "Ceresan" or "Agrosan G" at a similar rate as recommended for seed oats, to promote a vigorous braird and assist in preventing disease in the crop.

HAY.—Fields intended for hay should not be grazed after the end of March, otherwise yields may be seriously reduced. A suitable mixture of artificial manures, such as that recommended on page 627 should be applied during late March or early in April, and any loose stones collected and the land rolled so that possible trouble may be avoided at harvesting time.

PASTURE.—Grassland which has been harrowed and manured during the past winter should be rolled when opportunity offers, to level the ground and consolidate the soil. Heavy land, however, should not be rolled during damp weather, as there is a danger of hardening or "poaching" the soil, if this is done.

An early "bite" of grass will be particularly welcome this year in view of the high cost of hand-feeding, and where pastures have been dressed with phosphatic manures the production of early grass will be further encouraged

by the application of a nitrogenous manure.* About 1 cwt. of sulphate of ammonia or of nitro-chalk per statute acre is a suitable dressing, and should be applied during March or early in April.

Where phosphatic manures have not been applied during the winter months to pasture in need of manuring, improvement in this year's grazing may still be obtained from an application of from 4 to 6 cwt. per acre of Semsol, or of superphosphate, if made now.

SEEDS MIXTURES.—The greatest attention should be given to the selection of a seeds mixture for laying out land to pasture since the ultimate type of grazing produced depends to a great extent on the type of mixture used. While an expensive mixture is not an essential to the foundation of a good pasture, seeds of good quality only should be used. A convenient method of ascertaining the quality of seeds intended to be purchased is to send samples to the Ministry's Seed Testing Station for testing. The charge made to farmers for this service is only 3d. per sample, and it provides a valuable safeguard against obtaining inferior seeds. Envelopes for the despatch of samples can be obtained free, on application to the Secretary, or Agricultural Organiser, of the County Committee of Agriculture, or to the Ministry. Particulars of suitable seeds mixtures for Northern Ireland conditions are given in Leaflet No. 40 and on page 625 of this report.

SEASONAL LIVESTOCK NOTES.

OX-WARBLE FLY.—In accordance with the Ox-Warble Fly Order the first dressing for the destruction of ox-warble fly maggots in cattle must be applied between the 15th and 22nd March. Subsequent dressings at intervals of 28 days must also be applied until no further maggots appear. Experience has shown that normally four applications of a suitable wash are required annually to destroy all the maggots that appear. Unless all cattle infested with warbles are dressed at the times prescribed in the Order, mature maggots may escape and perpetuate the pest, thus rendering its rapid extinction impossible. Concerted action on the part of all cattle owners, and strict compliance with the Order, will completely eradicate the pest in a few years. In view of the enormous loss caused by ox-warble fly maggots annually to the cattle industry, and the small expenditure involved in dressing cattle, strict compliance with the Order, which will be in the best interests of cattle owners themselves, is especially advocated. Moreover, failure to destroy the warble maggots is likely to lead to a prosecution.

The following derris-root preparations are recommended by the Ministry for dressing cattle this year:—Arnold's "Warble Fly Powder", "B.D.H. Anti-Warble Fly Powder", Cooper's "Warble Fly Powder", Cooper's "Polvo", "Cowboy Derris Powder", Evan's "Warble Fly Powder",

"Gad-Ex" (Day Son & Hewitt, Ltd.), Hayward's "Warble Fly Remedy", Tennant's "Paragad", "Plough Brand Warble Fly Powder", Sumner's "Warble Fly Powder", "Warblo" (Osmonds), "Warflix" (Pan Britannica Industries, Ltd.) and Young's "Warble Fly Powder". These preparations can all be bought in conveniently sized packages, and should be used according to the directions given with the material. Further information relating to the Order is given in Circular No. 13, while particulars regarding the preparation and application of washes are given in Leaflet No. 64.

CALF REARING.—The rearing of calves, which will be arriving in increasing numbers from now onwards, will occupy attention on many farms at this time. While good breeding is the first essential to successful calf rearing, management also plays an important part. Strict attention to cleanliness, housing and management, is necessary if first-class calves are to be reared. The calf house should be adequately lighted, well ventilated, and provided with an impervious or water-tight floor which allows of easy cleaning. It is a good practice to paint the navel cord of all calves at birth with tincture of iodine as a precaution against white scour and other infection. (See Leaflet No. 82—White Scour in Calves).

The feeding of whole milk is essential during the first four weeks of the calf's life; but after this period separated milk, along with small quantities of meals given dry after the milk, can be gradually substituted for the whole milk. There is no necessity to use proprietary calf meals when the whole milk is being substituted by separated milk. These meals are often sold at prices far in excess of their feeding value, and their use adds unnecessary expense to the cost of rearing. A small allowance of a mixture of crushed oats, bran and maize meal, or even crushed oats alone, fed dry after the separated milk is all that is required at this stage. On farms where supplies of separated milk, skim milk or buttermilk are limited in quantity, or are not available, the difficulty of rearing good calves is increased, but experiments have shown that on such farms satisfactory rearing results can be obtained by the use of suitable meal mixtures. Particulars of the meal mixtures recommended in these cases are given in Leaflet No. 54.

DISHORNING OF CALVES.—All calves intended for sale as beef or stores should be dishorned before they are nine days old. Dishorning by means of caustic potash is simple to carry out and is inexpensive. Particulars regarding this method are given in Leaflet No. 5.

SHEEP.—As lambing is now in progress, careful attention to the ewe flock will be necessary, and will be well repaid by the better results obtained. The flock should be brought to a field convenient to the farmstead each evening and left there for the night. This practice will not only enable the flock to be inspected each evening and morning with the minimum of trouble, but will

also provide exercise for the ewes, which is very necessary. Usually little, if any, assistance is required by lambing ewes, but it is essential if losses are to be kept to the minimum, that the flock be inspected frequently, so that assistance may be given when required. Before help is given, the hands of the attendant should be well washed with soap and warm water, to which a little disinfectant has been added, and then lubricated with raw linseed oil.

Useful information relating to the care and management of sheep is given in Leaflets Nos. 47 and 63.

FEEDING OF POTATOES TO STOCK.—As there is a possibility that supplies of potatoes on farms may not all be disposed of this season through the ordinary marketing channels, and as prices are low, the inclusion of potatoes in rations for stock feeding should be adopted. The feeding of boiled potatoes to pigs will save money on purchased feeding stuffs and, provided they are used in the proper proportions, the quality of the bacon will also be improved. Leaflet No. 35 gives full particulars regarding the feeding of potatoes to pigs and examples of suitable meal mixtures to use along with boiled potatoes.

Potatoes can also be used with good results for feeding to dairy cows and to fattening cattle. They should be pulped or "fingered" and fed raw, commencing with about half a stone per head daily and increasing gradually up to a maximum of 2 stones per head per day. If the cattle show any signs of scouring, the amount of potatoes fed should be reduced immediately. The sprouts should be removed before feeding potatoes raw to stock.

SEASONAL GARDEN AND ORCHARD NOTES.

The next few weeks should be the busiest period of the year in the vegetable garden, and to a large extent the success of the season's work will depend on the correct timing of the sowing of the seeds and on the completion of the various operations at the proper times. If the soil has been treated during the winter as advised, it should break down readily when dry and be easily prepared for seed sowing.

VEGETABLES.—As soon as soil and weather conditions permit, seeds of broad beans, peas, parsley, parsnips, onions, lettuce and garden turnips should be sown where the crops are to mature. The main sowings of seeds of cabbage, cauliflower, broccoli, Savoy cabbage, Brussels sprouts, borecole and leeks should be made in lines towards the end of March or early in April, to obtain plants for planting out later in positions where they will mature.

VEGETABLE MARROWS AND CUCUMBERS.—Seeds of cucumbers for growing in cold frames and of vegetable marrows for growing out of doors, should be sown during March or early April in pots in a hot frame or greenhouse.

CELERY.—Seeds of celery should be sown now in boxes in a hot frame or greenhouse.

CABBAGE.—Cabbage planted out last autumn should be given three liberal dressings (up to 3 cwt. each per acre) of nitrate of soda during the next few weeks, allowing from 10 to 14 days between each two dressings.

CAPSID BUGS ON APPLE TREES.—Apple trees which were attacked last season by capsid bugs should be sprayed with an approved brand of mineral oil spray when the fruit buds show less than a quarter of an inch of growth of the scale leaves. These mineral oil sprays are liable to damage the buds if applied when the young leaves have unfolded from the buds, and will not be fully efficient if applied too early. The importance of applying these sprays at the proper time is, therefore, strongly emphasised. Two gallons of the oil as purchased should be thoroughly mixed with two gallons of soft water, and this mixture added to 36 gallons of water. This makes 40 gallons of spray fluid ready for application. Thorough spraying is essential if satisfactory results are to be obtained. Further particulars regarding the control of apple capsids are given in Leaflet No. 10—"Fruit tree pests-Capsid bugs."

PREVENTION OF APPLE SCAB DISEASE.—Supplies of hydrated lime and of bluestone for the preparation of washes to be applied for the prevention of apple scab, should be ordered in good time so that there may be no delay when the proper season for the application of the sprays arrives. Details regarding the spraying of apple trees are given in Leaflet No. 33.

FLOWERS.—Seeds of hardy annuals such as sweet-pea, clarkia, godetia, Shirley poppy, nasturtiums, etc., may be sown out-of-doors early in April. Early flowering chrysanthemums may be planted out in suitably prepared ground early in April. Bush rose trees should be pruned during either the last week in March or first week in April. To get good growth and large blooms severe pruning in the case of most varieties will be necessary.

SEASONAL POULTRY-KEEPING NOTES.

HATCHING.—Hatching of eggs from breeds, such as Rhode Island Red, White Wyandotte and Light Sussex, should be completed as soon as possible where the aim is to have pullets which will start laying next autumn. Late hatched chicks are seldom profitable and, besides, they are often more difficult to rear than those hatched early in the season. Chickens of the light breeds, such as the White Leghorn, which mature more rapidly than those of the heavy breeds, may be hatched during late March and early April, with the expectation of the pullets laying next autumn and winter; hatching of eggs from such breeds may, therefore, be continued, if necessary.

The incubator may be kept going by the hatching of ducks for winter egg production and for table purposes. The Kaki-Campbell and the Indian Runner breeds are the most suitable for egg production purposes, while for

the production of table ducklings, the Aylesbury and Pekin, or a cross between these breeds, are satisfactory. When hatching duck eggs in an incubator, more moisture should be supplied than for hen eggs.

BROODER SPACE FOR CHICKS.—The importance of providing ample space for chicks in brooders and other chicken rearing appliances may again be stressed. Overcrowding retards development and growth, and results in lack of stamina and vigour, which are essential if birds, which can withstand the strain of heavy egg production, are to be reared. A house which provides sufficient accommodation for chicks when hatched will not be large enough when the birds reach the age of from six to eight weeks, and unless this fact is borne in mind, overcrowding with its consequent evils will result.

SEPARATION OF SEXES.—Many poultry keepers do not separate the sexes until the chickens are well grown and the cockerels almost ready for disposal. It must be emphasised that the separation of the pullet chicks from the cockerels as soon as the sexes can be determined is an important feature of successful chicken rearing, and should not be neglected. More accommodation will be provided for the pullets, and the danger of overcrowding lessened, if separation of the sexes is done in good time. This practice also permits of the pullets being fed properly, and of the cockerels being penned up for fattening purposes and fed accordingly. A suitable mash for young cockerels is equal parts maize meal, pollard and Sussex ground oats, wet with separated milk or buttermilk. It should be remembered that the earlier the cockerels are marketed the better are the prices likely to be obtained.

MANAGEMENT OF GROWING PULLETS.—The pullets should be placed on free range. A field of fresh young pasture should, if possible, be selected for the pullets at this stage, otherwise losses from parasitic diseases are liable to occur. It is a foolish practice to take precautions against disease during the early stages, and to neglect to do so when the troublesome rearing period is finished and the birds are put out on range. Either a slatted floor house or a Sussex Ark is excellent for accommodating pullets when they are put out on range. These types of houses provide efficient ventilation, and can readily be changed to fresh ground. If the houses are not changed daily to fresh ground, however, the birds will not range far afield, and the ground around the house will become soiled and fouled, thus defeating the whole object of this type of house. Accordingly, the house should be moved daily to fresh ground and the droppings on the previous site scattered.

A good grower's mash should be fed to the pullets. Examples of suitable mashes for this purpose are given in Leaflet No. 20.

CULLING OF LAYING FLOCKS.—This is a suitable time for examination of the laying flock and for the culling out of those birds which will not be required for breeding purposes next year. The birds which are to be discarded should

be penned up, if possible, and given a daily wet mash for about a fortnight before being sold. Useful hints on culling are given in Leaflets Nos. 2 and 29, while information on the care and management of the birds to be retained for breeding purposes is given in Leaflet No. 83.

TURKEYS.—Turkey hens should be fed on a good laying mash from now onwards to encourage egg production. To avoid difficulty in locating nests, and to prevent eggs being lost, nests should be provided in hedges or banks where some natural cover is present. A couple of large boxes, laid on their sides, and having the entrances well hidden by brushwood or whins so that the turkeys can occupy them without being seen, will be suitable for this purpose.

It is a mistake to delay the setting of turkey eggs until the turkey becomes broody, as this storage of the eggs may be too long to obtain good hatching results. An ordinary broody hen will hatch turkey eggs quite satisfactorily, but not more than the number of eggs she can comfortably cover should be given to her to hatch, otherwise breakages may occur.

Further information on the hatching and rearing of turkeys is given in Leaflet No. 37.

Owners of turkey hens are reminded that they can have these birds mated to superior turkey roosters at County Turkey Stations for a nominal fee. Lists giving the names and addresses of holders of these Stations, and of hen, duck and goose stations, can be obtained free, on application to the Secretary, or Agricultural Organiser, of the Committee of Agriculture for the County.

THE GROWING OF BARLEY.

The most suitable soils for barley growing are well drained, medium loams of a nature suitable for growing turnips or potatoes. In Northern Ireland, where there is a moderately high rainfall, light soils in good condition will also produce satisfactory crops of barley. Barley may also be grown on peaty soils, if well drained, but as the crop is liable to lodge on such soils, their use for barley growing is limited. The crop will not be a success if grown on wet or water-logged soils.

The main object when growing the crop for feeding is to get a high yielding variety which will ripen early. A strong-strawed variety is also desirable, as heavy crops of weak-strawed varieties are liable to lodge, and, accordingly may be difficult to harvest. In experiments conducted last season by the Agricultural Instructors, Spratt-Archer, and Old Common (Chevallier), gave satisfactory yields. Spratt-Archer is a strong-strawed variety, and is suitable for growing on the richer types of soils where there is a danger of lodging

occurring. Old Common produces longer and slenderer straw, and is more suitable for growing on the lighter classes of soils.

While barley is usually grown after either turnips or potatoes, it may also be grown on lea land, or after another cereal crop following lea. Barley is shallow rooted and grows rapidly, but is unable to compete successfully with weeds; it is better, therefore, to avoid sowing barley after another cereal crop unless the land is very clean. It is a particularly suitable nurse crop for grasses and clovers, and this is another reason why it is an advantage to take a crop of barley after a root crop, since, in the usual rotation practised, the grass and clover seeds are sown with the cereal crop following the manured crop.

Since barley does not give satisfactory results on acid soils, a dressing of from 1 to 2 tons of burnt lime per acre should be applied, if the land has not been limed for a number of years. The lime is best applied on top of the ploughed ground about a fortnight before the seed is sown.

The manuring will depend mainly on soil conditions and the place in the rotation. A phosphatic manure is beneficial, as it helps root development in the early stages and hastens ripening. About 3 cwt. superphosphate per acre is a suitable dressing. Excessive nitrogenous manuring will likely result in a lodged crop and in delayed ripening. For soils of average fertility not more than 1 cwt. per acre of sulphate of ammonia should be applied. Potash is not generally required except on the lightest soils.

When barley is grown after a potato or a turnip crop, which has been well manured, there is little necessity to apply any additional fertilisers, but liming should not be neglected, as not only will it help the barley crop but also the succeeding pasture.

When grown after another cereal crop, especially on land not in high condition, a complete dressing of artificial manures should be applied. This dressing might be 1 cwt. sulphate of ammonia, from 2 to 3 cwt. superphosphate, and 1 cwt. 30 per cent. potash salts, per acre.

The necessary cultivations should be carried out to produce a fine surface tilth. It is important to have the seed bed fine on the surface and firm underneath. Firmness is particularly necessary if the crop is grown on lea ground.

The time for sowing will depend on the condition of the soil, but, generally speaking, the earlier the sowing the better will be the results, provided the soil is in a fit condition to receive the seed. The seed may be sown any time after the beginning of March and the rate of seeding will depend on whether the seed is to be put in with a corn drill or sown broadcast. If the drill machine is used, from 12 to 14 stones of seed per acre will be sufficient and, if sown broadcast, about 16 stones per acre will be necessary.

These cultural methods are also suitable for the growing of barley for malting purposes.

SEEDS MIXTURES FOR HAY AND PASTURE

Farmers will be considering now the purchase of grass and clover seeds for sowing land down to temporary pasture. Unfortunately, in the past, the important matter of seeds mixtures was not given the attention it deserved, and the result of this failure to appreciate the absolute necessity to sow a suitable mixture of grasses and clovers, if a good pasture is to be obtained, is seen in the many poor, thin, weedy pastures which are prevalent throughout the country.

It is feared that many farmers regard temporary pasture as being of secondary consideration and are, therefore, concerned chiefly with the prospect of getting good crops of hay and, perhaps, of ryegrass seed. The object of getting good hay crops is not opposed to the production of good pastures, provided the principles underlying the production of both are understood and adopted. It is far easier to produce a good crop of hay than to produce a good pasture, but the production of good pasture need not necessarily mean the failure to obtain a good crop of hay or of ryegrass seed.

Temporary pasture is a crop which occupies the ground for three, four, or more years. This being so, it should be the aim and object of every farmer, when laying land down to pasture, to do everything possible to ensure that this crop shall be a good one; besides, the quality of the pasture at the time the field is again ploughed for a rotation of crops will influence for good or bad the yields of these crops. This, in itself, should be sufficient justification for the little extra expense involved in the purchase of suitable mixtures of seeds. It is well-known, for example, that pastures containing wild white clover not only provide more and better grazing for stock than those which do not, but such fields, when ploughed up again, produce superior yields of crops, and do not normally require so much nitrogenous manure as those in which wild white clover was absent, or poorly represented. It is seen, therefore, that a suitable seeds mixture may, indirectly, save expense in the purchase of manures later.

Probably the most frequent mistake made in the composition of seeds mixtures is the omission of seeds of species of permanent grasses and clovers. The ryegrasses are not permanent—Italian ryegrass is very short-lived—and while these produce good crops of hay, they cannot be depended on to form good pastures. Of the permanent species of grasses, cocksfoot, timothy, rough-stalked meadow grass and meadow fescue are the most useful, while of the clovers, wild white clover is truly permanent, and red and alsike clovers short-lived. The permanent species of grasses do not form seed in the first year, as do the ryegrasses and, accordingly, their inclusion in a mixture where it is proposed to save perennial ryegrass seed will not interfere with

the purity of the sample of that seed. Where Italian ryegrass seed is saved, it is not usual to leave the land in pasture afterwards, but to plough it up again for another crop.

It is impossible to prescribe a mixture of seeds to suit all soils and conditions, but some general rules may be laid down.

- (1) Do not sow ryegrasses in excess.
- (2) Include an adequate proportion of permanent grasses, particularly cocksfoot.
- (3) Include wild white clover.
- (4) Do not sow "complicated" mixtures. Simple mixtures of carefully chosen strains of a few species are much to be preferred.
- (5) Do not sow mixtures of unknown composition.

The following mixtures should be regarded as types only, and will serve as a guide.

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING
(SEED NOT SAVED).

Pounds per statute acre.

Species				Average Soils	Cold Clay Soils	Peat Soils	Poor thin Soils
Perennial Ryegrass							
Irish or Scottish	..	..		12—15	18	14	20
Italian Ryegrass							
Irish	..	..	..	5—7	—	5	—
Cocksfoot							
Danish	..	..	..	8—10	6	5	10
Timothy							
Canadian or Scottish	..	..	..	4—5	8	6	—
Rough-stalked Meadow Grass							
American	..	..	..	1	3	2	2
Crested Dogtail							
Irish	..	..	..	—	—	3	3
Red Clover							
English Broad	..	..	..	1	—	—	—
Montgomery, Cornish Marl or English late-flowering	..	..	..	1	—	—	1
Alsike Clover							
Canadian	..	..	..	1	2	2	1
Wild White Clover							
Kentish	..	..	..	1	1	1	1
Total (lb. per statute acre)				34—42	38	38	38

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING ON MEDIUM SOILS (PERENNIAL RYEGRASS SEED SAVED).

1½ to 1½ bushels	35 to 42 lb.	Perennial Ryegrass.
	8 "	Cocksfoot.
	3 "	Timothy.
	½ "	Broad Red Clover.
	½ "	Late-flowering Red Clover.
	1 "	Wild White Clover.

Total 48 to 55 lb. per statute acre.

Red clover should be omitted altogether in districts where it tends to form too large a proportion of the herbage.

MANURIAL MIXTURES FOR FARM CROPS.

The following notes on suitable mixtures of artificial manures for the different farm crops may be helpful at this season :—

OATS.—For oats on lea ground in poor condition, and on land following potatoes, the following mixture of artificial manures per statute acre is recommended for application a few days before or at time of sowing the seed.

- 1 cwt. sulphate of ammonia.
- 2 cwt. superphosphate.
- 1 cwt. 30 per cent. potash salts.

For oats following wild white clover lea and on other land in good condition, an application of 2 cwt. superphosphate, and from ½ to 1 cwt. 30 per cent. potash salts per statute acre increases the yield and assists in preventing lodging.

WHEAT.—An application of 1 cwt. of nitrogenous manure such as sulphate of ammonia, nitro-chalk or nitrate of soda, per statute acre should be applied during early April and the braird harrowed lightly afterwards.

FLAX.—From 1 to 1½ cwt. muriate of potash per statute acre should be applied before sowing the seed. On land in poor condition the addition of ½ cwt. sulphate of ammonia per statute acre is beneficial.

POTATOES.—Where farmyard manure is available a mixture of 1 cwt. sulphate of ammonia, 4 cwt. superphosphate, 1 cwt. muriate of potash, along with 15 tons farmyard manure per statute acre is recommended. The artificials can be mixed and stored for from two to three weeks before use without impairing the efficiency of the mixture.

If farmyard manure is not available, the mixture of artificials stated should be applied at the rate of 9 cwt. per statute acre.

TURNIPS.—A dressing of from 10 to 15 tons of farmyard manure, along with from 4 to 6 cwt. superphosphate, Semsol, high grade basic slag, or Gafsa rock phosphate per statute acre should be given.

Where farmyard manure is not available a dressing of from 1 to $1\frac{1}{2}$ cwt. sulphate of ammonia, 6 cwt. superphosphate or other phosphatic manure, and from 1 to 2 cwt. 30 per cent. potash salts per statute acre should be applied. If “finger and toe” disease is feared, basic slag should be used in preference to the other sources of phosphates.

MANGELS.—Liberal manuring of mangels is necessary to obtain best results. The following dressing per statute acre is recommended :—

- 20-25 tons farmyard manure.
- 2 cwt. sulphate of ammonia.
- 4 cwt. superphosphate.
- 4 cwt. kainit.

In addition 1 cwt. nitrate of soda per acre, applied as a top-dressing after thinning, benefits the crop.

CABBAGE AND KALE.—For these crops the following dressing per statute acre should be given :—

- 20-25 tons farmyard manure.
- 2 cwt. sulphate of ammonia.
- 4 cwt. superphosphate.
- 1 cwt. 30 per cent. potash salts.

HAY.—A suitable top-dressing for application during March to land intended for hay for cutting or for seed sowing purposes is :—

- | | |
|-----------------------------------|---------------------|
| 1 cwt. sulphate of ammonia. | } per statute acre. |
| 2 cwt. superphosphate. | |
| 1 cwt. 30 per cent. potash salts. | |

PASTURES.—Where the slower acting phosphatic manures, such as high-grade basic slag or Gafsa rock phosphate have not been applied during the winter months to grassland, Semsol or superphosphate can be applied at the rate of from 4 to 6 cwt. per statute acre during the spring months. On the lighter classes of soils the application of 1 cwt. 30 per cent. potash salts per acre, in addition to the phosphatic manure, is beneficial.

For the production of early grass, 1 cwt. sulphate of ammonia or nitro-chalk per acre should be applied during the first week in April.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

SCHOOLS.—New pupils will be admitted to the Ulster Dairy School, Cookstown, and to the North-West School, Strabane, for the session which begins on the 5th April next. Particulars regarding the courses of instruction provided at these Schools are given in the illustrated prospectuses which can be obtained free on application to the Ministry. Application for admission to either School should be made by intending pupils immediately.

OX-WARBLE FLY.—The first dressing of warble-infested cattle must be completed by the 22nd March, and the second dressing should be applied between the 12th and 19th April. Neglect to dress infested cattle is likely to lead to a prosecution. Supplies of the recommended preparations can be obtained from chemists and agricultural merchants.

ANNUAL REPORTS OF COUNTY COMMITTEES OF AGRICULTURE.—Up-to-date information on agricultural, horticultural, poultry-keeping and dairying matters, in addition to the detailed results of all the experiments carried out by the Instructors in 1937, are given in the Annual Reports of the County Committees of Agriculture. Supplies of these Reports are now available in most counties, and copies can be obtained free from the Secretary, or Agricultural Organiser, County Committee of Agriculture, on request.

LEAFLET REVISION.—The latest information regarding the yields of different varieties of crops is given in Leaflet No. 44 (revised March, 1938). In this leaflet the results of field variety trials conducted by the Agricultural Instructors in 1937 are reviewed. Supplies of the leaflet will be available soon.

Leaflet No. 1, "Flax Seed, 1938", gives information regarding the prospective supply of flax seed for sowing this spring, and descriptive notes on the newer varieties and straws. Copies of this leaflet, and of others mentioned in this Report, are obtainable free, on request, from the Ministry.

SEEDS MIXTURES.—Good hay crops and pasture that will graze well, can only be obtained if good quality grass and clover seeds are sown, and suitable mixtures, for the type of land to be sown out, used. To ensure using good quality seeds in mixtures, samples should be sent to the Ministry's Seed-Testing Station. Information relating to suitable mixtures of seeds for different classes of soils is given on page 625 and in Leaflet No. 40.

ACCREDITED POULTRY FARMS.—Hatching eggs and day-old chicks from stock which have all passed the test for Bacillary White Diarrhoea disease can be obtained from Accredited Poultry Farms. Lists giving the names and

addresses of owners of these farms can be obtained free on application to the Ministry.

SPRAYING OF APPLE TREES.—Apple trees should be sprayed to prevent apple scab disease and to obtain bigger and better crops of fruit. See Leaflet No. 33 for information regarding suitable spray mixtures and the times at which these should be applied.

CARE OF BREEDING BULLS.—Many bull owners will have obtained new animals at the recent sales, and all will be concerned with the keeping of their bulls in good breeding condition, which is essential to obtain satisfactory results. Valuable information regarding the management, feeding, etc. of breeding bulls is given in Leaflet No. 61, a copy of which should be in the possession of every owner.

CLASSES IN POULTRY-KEEPING.

County	Day and Date of Commencement of Class	Centre	Time at which class is held
Down	Mon., 21st March	St. Patrick's Hall, Ballynoe	7-0 p.m.
Fermanagh	Wed., 16th March	Letterbreen Hall	7-30 p.m.
Londonderry	Mon., 21st March	St. Aiden's Hall, Bellarena	7-0 p.m.
	Mon., 28th March	Fallagloon Hall, Maghera	3-0 p.m.

The above Classes will be held for several days each week, and will be continued for a period of at least three weeks.

DEMONSTRATION.

A Demonstration on the Sowing of Vegetable Seeds has been arranged by County Londonderry Committee of Agriculture, to take place at Mrs. J. McNeill's garden, Culcrow, Aghadowey, on Friday, 18th March, commencing at 2-30 p.m.

SCHOLARSHIPS IN CREAMERY MANAGEMENT.

The Ministry has made arrangements with the Department of Agriculture, Dublin, and the Authorities of the University College, Cork, for the admission this year to a special course of technical training at the College of two young men from Northern Ireland who intend to qualify as Creamery Managers. The course is of two years' duration, and candidates who are successful at the Competitive Examination will be able to qualify for the College Diploma

in Dairy Science. In view of the provision in the Marketing of Dairy Produce Act (Northern Ireland) that Managers of Central and Auxiliary Creameries shall hold qualifications of a standard prescribed by the Ministry, this opportunity of obtaining the requisite training is of special importance, as the Diploma referred to above is one of the highest qualifications which a Creamery Manager can possess. The Course will consist of two terms of technical training at University College, Cork, during the winters of 1938-39 and 1939-40, with an intervening period of practical training of 20 weeks' duration at the College Experimental Creamery and at an approved Creamery in Northern Ireland in the summer of 1939.

Applicants for these Scholarships must be between 18 and 30 years of age on the 1st October, 1938, and must be resident, or the sons of residents in Northern Ireland, for the 12 months ended 31st December, 1937. Previous knowledge of creamery work is not essential, but a good standard of general education will be required.

Application forms and full particulars regarding the Scholarships may be obtained from the Secretary, Ministry of Agriculture, Stormont. It should be noted that the prescribed form of application, duly completed, must be lodged with the Ministry not later than the 16th April, 1938.

SIXTEENTH EGG LAYING TEST AT STORMONT.

The fifth period of four weeks ended on 17th February, 1938. There was a further increase in egg-production and a slight increase in the proportion of scoring eggs. The total number of eggs laid during the period was 10,200, which, on the basis of the entire original flock, gives an average of 14.4 eggs per bird. Of this number 9,077 or 89.9 per cent. were scoring eggs (super grade and first grade), whereas the percentage of scoring eggs in the previous period was 87.5 per cent. The average egg-production to date for all birds originally penned is 63.9 as compared with 70.6 for the first 20 weeks of the previous test. The highest sectional average egg-production for the period is to the credit of the Station-holders' Rhode Island Reds in Section 5(c), viz., 15.7 eggs per bird; the Station-holders' White Leghorns in Section 5(b) have the next best average at 15.3 eggs per bird.

Four birds died during the period, bringing the total number of deaths to 31. This represents a mortality rate of 4.3 per cent. as compared with 2.4 for the corresponding 20 weeks in the previous test.

The mortality rate per cent. in each section is shown in the following table:—

Section					% Mortality Rate
1.	White Wyandottes (Open)	..	..	..	3.0
2.	White Leghorns (Open)	..	..	..	9.3
3.	Rhode Island Reds (Open)	..	..	..	4.5
4.	Any other pure breed (Open)	..	..	..	2.2
5(a).	White Wyandottes (Station-holders)	..	..	..	1.9
5(b).	White Leghorns	do.	..	..	7.1
5(c).	Rhode Island Reds	do.	..	..	2.8
6.	Poultry Clubs and Young Farmers' Clubs	..	..	..	8.3

The following are particulars of the leading pens in each Section at the end of the Fifth period:—

SECTION 1. WHITE WYANDOTTES (OPEN). 22 pens.

Position.	No. of Pen.	Name and Address of Owner.	Numbers of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	10	Mrs. J. R. Jackson, Fortview, Coleraine, Co. Londonderry	101	347	110	5	448
2	7	Lt.-Col. J. P. Galbraith, Clanabogan, Omagh, Co. Tyrone	177	258	37	1	435
3	19	Mr. J. C. Stewart, Balloo, Killinchy, Co. Down	164	249	71	1	413
4	16	Mr. T. J. McMillan, Crossgar, Co. Down	231	176	11	—	407

SECTION 2. WHITE LEGHORNS (OPEN). 9 pens.

1	31	Mr. J. O. Turkington, Derryinver, Lurgan, Co. Armagh	262	119	12	1	381
2	29	Mr. J. Stevenson, Maze View, Corcreeny, Hillsborough, Co. Down	91	288	76	9	379
3	26	Mr. T. J. McMillan, Crossgar, Co. Down	198	138	26	—	336

SECTION 3. RHODE ISLAND REDS (OPEN). 26 pens.

Position.	No. of Pen.	Name and Address of Owner.	Numbers of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	39	Mrs. H. Farr, Elsneuk, Dundrum Road, Newcastle, Co. Down	374	108	7	1	482
2	49	Mrs. J. McNeill, Drain's Bay, Larne, Co. Antrim	236	183	8	—	419
3	55	Mr. W. Patton, The Hill, Loughries, Newtownards, Co. Down	168	224	126	10	392
4	51	Mr. N. Ormsby, Harryville, Lisburn, Co. Down	144	242	44	1	386

SECTION 4. ANY OTHER PURE BREED. 15 pens.

1	67	Mr. R. Holmes, Moneycarrie, Killykerigan, Coleraine, Co. Derry (Buff Rocks)	369	106	7	1	475
2	68	Mr. R. Holmes, Moneycarrie, Killykerigan, Coleraine, Co. Derry (Buff Rocks)	255	220	34	3	475
3	66	Greenmount Agric. & Hort. College, Muckamore, Co. Antrim (Light Sussex)	89	205	107	2	294

SECTION 5(a). STATION-HOLDERS WHITE WYANDOTTES. 9 pens.

1	82	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down	217	218	35	—	435
2	76	Miss A. Brown, Ballyhill, Crumlin, Co. Antrim	120	294	127	1	414
3	81	Miss A. Peel, Aghadalong, Roses Lane Ends, Belfast	165	185	71	2	350

SECTION 5(b). STATION-HOLDERS WHITE LEGHORNS. 7 pens.

1	91	Miss I. J. Magill, Mulloughdrin, Dromara, Co. Down	337	124	65	—	461
2	90	Mrs. J. Knox, Shanmullagh, Ederney, Co. Fermanagh	167	196	21	—	363
3	89	Miss I. Gilmer, Rashee, Ballyclare, Co. Antrim	166	189	19	—	355

SECTION 5(c). STATION-HOLDERS, RHODE ISLAND REDS. 18 pens.

Position.	No. of Pen.	Name and Address of Owner.	Numbers of eggs laid.				Test Score.
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	102	Mrs. R. McGiffert, Rathcunningham, Toye, Belfast	226	276	26	—	502
2	104	Miss S. McKee, Ardmillan House, Killinchy, Co. Down	104	396	83	2	500
3	110	Mrs. J. W. Stewart, Boghill, Coleraine, Co. Londonderry	233	169	36	—	402

SECTION 6. POULTRY CLUBS AND YOUNG FARMERS' CLUBS. 12 pens.

1	116	Banbridge and District Poultry Club, Co. Down (Rhode Island Reds)	129	255	80	8	384
2	114	Ballywalter Young Farmers' Club, Co. Down (Rhode Island Reds)	170	185	16	—	355
3	117	Crossgar Poultry Club, Co. Down (Rhode Island Reds)	164	180	19	—	344

“Test Score” means the total of the super-grade and first-grade eggs.

Mrs. R. McGiffert's pen, No. 102, of Rhode Island Reds in the Station-holders' Section for that breed, now occupies 1st place in the entire test, while Miss S. McKee's pen, No. 104, of the same breed, and in the same Section is second. Pen No. 39 of Rhode Island Reds in Section 3, entered by Mrs. Farr, holds third place.

PRICES OF FEEDING STUFFS AT SPECIFIED CENTRES.

The following table shows the retail cash prices* per cwt. of Feeding Stuffs at 1st March, 1938, in ten representative centres in Northern Ireland.

	Antrim	Armagh	Ballymena	Belfast	Castellwellan	Coleraine	Dungannon	Enniskillen	Omagh	Strabane
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Protein Foods :										
Linseed (whole) ..	—	18 0	16 0	16 0	17 6	20 0	17 6	16 6	20 0	17 0
Linseed Cake, home-made ..	—	13 0	12 6	12 0	—	—	12 0	11 6	12 6	—
Linseed Cake, foreign ..	11 9	12 0	11 0	11 0	11 6	12 0	11 0	11 0	11 6	10 6
Linseed Cake Meal ..	11 9	12 0	11 0	11 0	11 6	12 0	12 0	11 9	11 6	11 0
Cotton Cake decorticated ..	10 0	—	9 6	10 6	10 6	9 3	10 6	10 0	10 6	10 6
Earthnut Cake, decorticated ..	9 3	—	9 0	11 0	—	9 3	10 0	9 6	10 3	9 3
Soya Bean Meal (extracted) ..	10 3	11 0	11 0	11 6	—	11 6	11 0	10 0	11 6	—
Fish Meal (60% protein) ..	17 6	17 0	16 0	15 0	—	16 6	16 6	16 0	17 0	16 9
Meat Meal (60% protein) ..	17 0	15 6	15 0	—	15 6	—	16 0	—	16 0	—
Meat and Bone Meal (40% protein) ..	—	11 0	—	10 0	—	—	13 0	—	—	12 3
Medium Protein Foods :										
Palm Kernel Cake ..	9 0	—	9 6	8 6	—	9 9	—	—	9 6	—
Palm Kernel Meal ..	9 0	9 6	9 6	8 6	—	9 9	—	—	—	—
Starchy Foods :										
Maize (whole) ..	7 9	8 0	8 0	7 9	—	8 6	8 0	8 0	8 7½	—
Maize Meal ..	8 3	8 3	8 6	8 0	8 6	8 9	8 6	8 3	8 6	8 0
Maize Flaked ..	8 9	9 0	8 6	8 6	8 9	8 9	9 6	8 9	9 6	9 0
Wheat (whole) ..	10 6	10 6	10 0	11 0	11 0	11 0	11 0	12 0	—	—
Bran, Red ..	8 9	8 6	8 3	9 0	9 0	8 9	9 0	9 6	9 6	9 0
Bran, White ..	9 9	10 0	9 4½	10 0	10 0	10 6	10 0	10 6	10 6	10 3
Pollard, Brown ..	8 9	9 0	8 6	9 0	—	9 0	9 0	9 6	9 6	9 3
Pollard, White ..	—	10 0	9 0	10 0	10 0	9 3	10 0	10 6	10 6	10 3
Barley Meal ..	10 0	10 3	9 6	10 0	9 6	9 6	10 0	10 6	10 3	11 0
Tapioca Root Flour ..	8 0	8 6	8 0	—	—	8 3	8 3	8 8	7 6	8 6
Oats (whole) ..	9 0	8 6	8 6	8 9	7 6	8 6	8 6	8 8	8 6	7 6
Crushed Oats ..	9 0	8 6	8 6	9 3	8 0	9 0	9 0	9 3	8 6	8 6

NON-CONCENTRATES :—The average prices at representative markets at the beginning of March, 1938, were as follows :—
 Potatoes (Main Crop), 2/3d. per cwt.; Upland Hay, 59/8d. per ton; Meadow Hay, 45 4d per ton;
 Oat Straw, 43/9d. per ton,

AVERAGE PRICES OF FEEDING STUFFS.

The following table shows the average retail cash prices per cwt. of feeding stuffs at 1st March, 1938, with comparative prices as at the first of the previous month; the costs per unit of protein equivalent and of starch equivalent are also given in respect of each month.

	Protein Equiv- alent	Starch Equiv- alent	Average price per cwt. at		Cost per unit of protein equivalent		Cost per unit of starch equivalent	
			1st Mar. 1938	1st Feb. 1937	Mar.	Feb.	Mar.	Feb.
Protein Foods			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Linseed	19.0	119.0	17 7	17 2	18 6	18 1	2 11	2 11
Crushed linseed	19.0	119.0	18 7	18 1	19 7	19 0	3 1	3 0
Linseed cake (home-made)	25.0	72.0	12 3	12 3	9 10	9 10	3 5	3 5
Linseed cake (foreign)	25.0	72.0	11 4	11 4	9 1	9 1	3 2	3 2
Linseed cake meal	25.0	72.0	11 7	11 10	9 3	9 6	3 3	3 3
Decorticated Cotton cake	35.0	71.0	10 2	10 3	5 10	5 10	2 10	2 11
Decorticated Earthnut cake	41.0	73.0	9 7	9 10	4 8	4 10	2 8	2 8
Extracted Soya bean meal	38.0	64.0	10 11	11 4	5 9	6 0	3 5	3 7
Fish meal (60% protein)	53.0	59.0	16 6	16 10	6 3	6 4	5 7	5 8
Meat meal (60% protein)	55.0	61.0	15 10	15 8	5 9	5 8	5 2	5 2
Meat & Bone meal (40% protein)	36.0	44.0	11 8	11 5	6 6	6 4	5 4	5 2
Medium Protein Foods								
Palm kernel cake	17.0	75.0	9 3	9 3	10 11	10 11	2 6	2 6
Palm kernel meal	17.0	75.0	9 3	9 3	10 11	10 11	2 6	2 6
Starchy Foods								
Maize	6.8	81.0	8 0	8 6	23 6	25 0	2 0	2 1
Maize meal	6.8	81.0	8 3	8 9	24 3	25 9	2 0	2 2
Flaked maize	8.6	83.0	8 11	9 5	20 9	21 11	2 2	2 3
Wheat	9.6	72.0	10 11	10 8	22 9	22 3	3 0	3 0
Red bran	10.0	43.0	8 11	9 0	17 10	18 0	4 2	4 2
White bran	10.0	43.0	10 1	10 3	20 2	20 6	4 8	4 9
Brown Pollard	11.0	60.0	9 1	9 1	16 6	16 6	3 0	3 0
White pollard	11.0	60.0	9 11	10 2	17 5	18 6	3 2	3 5
Barley meal	7.0	70.0	10 1	10 3	28 10	29 3	2 11	2 11
Oats	7.6	60.0	8 3	8 4	21 9	21 11	2 9	2 9
Crushed oats	7.6	60.0	8 11	9 1	23 6	23 11	3 0	3 0
Tapioca root flour	1.0	83.5	8 3	8 3	165 0	165 0	2 0	2 0
Non-Concentrates								
Potatoes	0.6	18.0	2 3	2 4	75 0	77 9	2 6	2 7
Upland Hay	4.9	24.0	3 0	3 0	12 3	12 3	2 6	2 6
Meadow Hay	4.6	31.0	2 3½	2 4½	9 10	10 4	1 6	1 6
Oat Straw	0.9	20.0	2 2½	2 2	48 7	48 2	2 2½	2 2

The object of the foregoing tables, besides providing information regarding the prices of feeding stuffs and the trend of prices, is to give purchasers a

guide as to the economic purchase of supplies. It should be understood that the price per ton is not a sound basis on which to judge whether or not a particular food or grade of a particular food is good value for money. The composition of the foods is the only basis on which different grades can be compared. The value of foods of different kinds, but of the same nature in reference to market prices, can also be compared on this basis.

In the case of an artificial manure which supplies only one fertilising ingredient as, for example, sulphate of ammonia, which supplies nitrogen, the cost of the unit of nitrogen at the price charged can be determined quite readily by dividing the price per ton by the percentage of nitrogen in the sample, and the figure thus obtained is the cost of a unit of nitrogen. By this method the most economical source of nitrogen can be ascertained. Similarly, in the cases of phosphatic and potassic manures.

With feeding stuffs, however, the same method cannot be applied to determine comparative values. This is because every feeding stuff contains three important food constituents in varying proportions. These are (1) carbohydrates, (2) oils or fats, and (3) proteins or albuminoids. The carbohydrates comprise a group of substances such as starch, sugar and cellulose. These substances supply heat or energy to the animal, and the surplus goes to form fat. They are the fuel which the animal requires to keep the body "fires" burning. The oils of a feeding stuff are also heat and energy suppliers, and the surplus is stored as fat. The oils are approximately $2\frac{1}{2}$ times more valuable than the carbohydrates as heat and energy producers, but excess in a ration may lower its digestibility and cause digestive troubles. The proteins are the most valuable and most expensive food constituent. They contain nitrogen and are the part of the food from which products which contain protein are chiefly made. Thus the protein products, such as lean meat, milk and eggs, are formed principally from protein, and young, growing animals, dairy cows and laying hens must have an adequate quantity of protein for full growth, development and production.

While all animals require a certain amount of carbohydrates, oils and proteins, the relative amounts depend on the class of stock. For example, a two-year-old fattening bullock requires much less protein than a dairy cow in milk, and a fattening chicken less than a laying pullet.

There are wide differences in the composition of the different kinds of feeding stuffs. Some are rich in carbohydrates and, therefore, particularly valuable for fattening purposes. These include oats, maize, barley and wheat, and their products. Others are rich in protein and are valuable for producing flesh, milk and eggs. These include decorticated cotton cake, decorticated earlnut cake, meat meal and soya bean meal.

In the following table the composition of some of the commonly used feeding stuffs is shown—

	Water.	Protein.	Oil.	Carbohydrates
Non concentrates				
Swede turnips ..	88	1	0.2	9
Potatoes ..	75	2	0.1	21
Cabbage ..	89	1.5	0.5	8
Oat Straw ..	14	4	2	37
Meadow hay ..	10	10	3	45
Pasture grass ..	80	3.5	0.8	10
Fattening Foods				
Crushed oats ..	13	9	6	60
Maize meal ..	12	10	4	70
Barley meal ..	13	12	2	66
Pollard ..	13	15	5	57
Flesh forming foods				
Decorticated Cotton cake ..	9	40	9	26
Decorticated Earthnut cake ..	10	46	7	28
Meat meal ..	11	60	6	—
Soya bean meal ..	11	44	1.5	32

The problem confronting the purchaser of feeding stuffs, who is concerned with the business of getting best value for money, is one which is much more difficult to solve than is the case with artificial fertilisers. There are at least four aspects of the problem to be considered :

- (1) The quality of the different foods offered for sale. This can be determined by reference to the particulars of composition which a seller must give a purchaser in accordance with the Fertilisers and Feeding Stuffs Act.
- (2) The physical condition of the foods, and if fresh or stale.
- (3) The suitability of the foods for the purpose in view.
- (4) The comparative values of the foods at the prices quoted.

The chief concern of this section of the Report is comparative values and, therefore, that aspect of the problem will be considered specifically.

The proteins play a part in the nutrition of the animal which cannot be taken by either carbohydrates or oils. In addition to this, the proteins, carbohydrates and oils have very different values for the production of energy or fat. It therefore follows that the simple procedure of totalling the percentages of these three ingredients and dividing this total into the price per ton in order to obtain a value for a unit of the food-stuff is quite unsound. Various methods have been used to compare the values of different feeding stuffs, but none is completely satisfactory. For practical purposes the least cumbersome is the

method whereby the food-stuffs are placed in groups of similar composition, and the values of the members of each group are then compared by consideration of (a) their protein equivalents, and (b) their starch equivalents. The starch equivalent is the number of pounds of starch which would be required to produce the same amount of "fat" in an animal as 100 pounds of the food-stuff in question. It is essentially a measure of the fat-producing value of the food-stuff. The protein equivalent is the number of pounds of digestible true protein, plus half the number of pounds of non-protein nitrogenous substances such as amides, present in 100 pounds of the foodstuff. This is a measure of the value of the food-stuff to the animal as a source of protein.

By this method all foods can be reduced to comparable standards based on (1) the protein equivalent, and (2) the starch equivalent.

The next stage in comparing values is to determine the cost of a unit of protein equivalent and of starch equivalent in the different foods which are being compared, and to enable the reader to do this the protein and starch equivalent figures for the different foods are given on the table on page 636, and also the cost per unit of protein equivalent and of starch equivalent in each case. These costs have been determined by dividing the protein equivalent figure and the starch equivalent figure, respectively, into the current price per ton, and the lower the quotient figures thus obtained the cheaper is the particular food as a source of protein or of starch equivalent as the case may be.

However, it would be quite misleading to compare the cost of a unit of protein equivalent in a protein food (which is purchased principally for its protein) with the cost of a similar unit in a starchy food. In other words, foods such as maize meal and pollard cannot be compared on the basis of cost of protein equivalent with foods such as decorticated cotton cake and meat meal.

The best course to adopt is to consider for what purpose the particular food is required, decide what foods are suitable for that purpose, examine the samples of these different foods which are offered and, if all appear to be satisfactory, apply the unit value system of determining which one provides protein equivalent or starch equivalent at the cheapest rate. A few examples may be helpful in explaining the procedure.

(1) Suppose it is intended to purchase a protein food for the purpose of balancing a ration for dairy cows. The protein foods suitable for dairy cows are decorticated cotton cake, decorticated earthnut cake and soya bean meal. From the table on page 636 it is seen, that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Decorticated cotton cake	...	...	5/10d.
Decorticated earthnut cake	...	...	4/8d.
Soya bean meal	...	...	5/9d.

Accordingly decorticated earthnut cake is the cheapest source of protein.

- (2) A protein food is required as a milk substitute to balance the ration for fattening pigs. The foods suitable for this purpose are soya bean meal, meat meal and meat and bone meal. Referring again to the table, it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Soya bean meal	...	...	5/9d.
Meat meal (60% protein)	...	...	5/9d.
Meat and bone meal (40% protein)	...	...	6/6d.

Therefore meat meal (60% protein) and soya bean meal are cheaper sources of protein than meat and bone meal (40% protein) amongst the purchased foods suitable for pigs. This example shows also how the price per ton may mislead a purchaser into thinking he is being economical when he buys at the cheapest price. The 60% meat meal costs 4/3d. per cwt. more than the 40% meat and bone meal, and yet it is a cheaper source of protein than the latter. Besides, a lesser proportion in the meal mixture will suffice, and having usually a lower content of oil than the 40% grade, it is likely to prove more satisfactory than that grade, both from the thriving point of view and its effect on the quality of the bacon.

- (3) Whether is it more economical to feed white pollard than brown pollard or white bran than red bran, even though the prices per ton of the white grades are higher than those of the brown or red grades? The figures in the table show that the cost of both the unit of protein equivalent and of starch equivalent is less for the brown pollard than the white, and less for the red than the white bran. It follows, therefore, that at current prices the coloured grades of pollard and bran are cheaper than the white grades. It should be remembered in this connection, however, that the comparison of costs in these cases has been made on the assumption that the composition of the coloured grades is the same as that of the white grades. A pollard containing say, 8 per cent. fibre, even if of a white colour, would have a far lower feeding value than one containing only 4 per cent. of fibre. Colour is not a guide as to the feeding value of pollard or bran.

PRICES OF FERTILISERS AT SPECIFIED CENTRES.

The following table shows the retail cash prices per ton of fertilisers at 1st March, 1938, in the representative centres in Northern Ireland.

	Antrim		Armagh		Ballymena		Belfast		Castlewellsan		Coleraine		Dungannon		Enniskillen		Omagh		Strabane				
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.			
Nitrogenous Manures :																							
Nitrate of Soda (15.5 % N.)	8	10	0	8	10	0	8	0	0	8	5	0	—	—	8	15	0	—	8	5	0		
Sulphate of Ammonia (20.6% N.)	8	0	0	8	10	0	7	12	6	8	0	0	7	17	6	8	0	0	8	5	0		
Nitro Chalk (15.5% N.)	8	0	0	8	10	0	7	10	6	8	5	0	—	—	8	10	0	8	10	0	8	5	0
Phosphatic Manures :																							
Superphosphate (16% S.P.A.)	3	15	0	3	17	6	3	16	3	3	18	9	3	15	0	4	0	0	4	5	0		
Semsol (5% S.P.A., 15½% P.A.)	3	12	6	3	12	6	3	10	0	3	10	0	3	10	0	3	15	0	3	10	0		
*Basic Slag (18% to 20% P.A.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Gafsa Rock Phosphate (26% P.A.)	3	5	0	3	5	0	3	10	0	3	5	0	3	2	6	3	7	6	3	6	3		
Potash Manures :																							
Kainit (14% P.)	—	—	—	—	—	—	3	0	0	—	—	—	3	10	0	4	5	0	3	15	0		
Potash Salts (20% P.)	4	10	0	4	10	0	4	0	0	4	5	0	4	7	6	4	15	0	4	5	0		
Potash Salts (30% P.)	5	15	0	—	—	—	5	5	0	—	—	—	5	17	6	5	5	0	5	10	0		
Muriate of Potash (50% P.)	8	15	0	9	0	0	8	10	0	8	15	0	8	17	6	9	10	0	9	0	0		
Agricultural Salt	1	5	0	2	0	0	3	10	0	—	—	—	2	10	0	1	15	0	—	—	3	0	0

Abbreviations : N.—Nitrogen. S.P.A.—Soluble Phosphoric Acid. P.A.—Phosphoric Acid. P—Potash.

* If obtained under the Land Fertility Scheme, the price of British made basic slag will be 25 per cent. less than the figures quoted, since a subsidy equivalent to one-quarter is payable.

The cost of the unit of fertilising ingredient is determined by dividing the price per ton by the percentage of the ingredient contained in the manure and this method of determining values is the only sound basis on which two different manures or two grades of the same manure, supplying the same fertilising ingredient, can be compared. The price per ton is not a reliable guide as to which is the better value for money. For example, at the prices ruling at Belfast for the various manures, as shown on the table on page 641, the costs of the units of the fertilising ingredients are as follow:—

Nitrate of Soda (15.5% N.)	..	..	10/3½	(Nitrogen)
Sulphate of Ammonia (20.6% N.)	..	..	7/4½	"
Nitro Chalk (15.5% N.)	..	..	9/8½	"
Superphosphate (16% S.P.A.)	..	..	4/9½	(Phosphoric Acid)
Semsol (5% S.P.A., 15½% P.A.)	..	..	2/11	"
Basic Slag (18% P.A.)	..	..	3/10½	"
Gafsa Rock Phosphate (26% P.A.)	..	..	2/1½	"
Kainit (14% P.)	..	..	4/3½	(Potash)
Potash Salts (20% P.)	..	..	4/-	"
Potash Salts (30% P.)	..	..	3/6	"
Muriate of Potash (50% P.)	..	..	3/4½	"

It is seen that the price of 14% Kainit is £3 0s. 0d. per ton, and of 30% Potash Salts is £5 5s. 0d. per ton, and it might be concluded that the Kainit was the better value for money. This is not so. The 30% Potash Salts contains more than twice as much Potash as the Kainit, and is, therefore, a cheaper source of potash when the price is even double that at which Kainit is offered. The cost of a unit of potash in the 30% Potash Salts is seen to be only 3/6d., whereas the cost of a unit of potash in Kainit is 4/3½d. At the prices ruling for these manures, 30% Potash Salts is, therefore, better value for money than Kainit. Similarly, it is seen that at the prices prevailing at Belfast Gafsa Rock Phosphate is the cheapest source of phosphoric acid and Sulphate of Ammonia is the cheapest source of Nitrogen.

In connection with the costs of the units of phosphoric acid, as shown in the table on the previous page, it should be noted that in the case of Superphosphate, the cost is that of a unit of soluble phosphoric acid: whereas in the cases of Basic Slag, Semsol, and Gafsa Rock Phosphate, the figures represent the cost of a unit of insoluble phosphoric acid. It would not, therefore, be correct to compare the unit price of the phosphoric acid in Superphosphate with those of the phosphoric acid in the other three.

TRADE AND PRICES OF LIVE STOCK AT BELFAST AUCTION MARTS.

The trade for fat cattle during the month of February was, on the whole, steady, and prices fluctuated within very narrow limits. The demand was chiefly influenced by supplies, which increased on one or two occasions and caused a slowing up of trade and a consequent easing of prices, but the undertone was firm throughout. Super-grade cattle were making up to 45/- per cwt., good commercials 41/- and 42/-, and secondary commercials around 40/- per live cwt. The average turnouts of store animals at these sales remained in keen request, and prices were generally maintained at high levels. Dairy cattle supplies showed little variation, but except for first-class stock, which continued to sell readily, prices tended easier during the month. At the auctions for fat sheep and lambs a steady demand was maintained for good animals of the cross-bred and white types, but blackface stock declined in price during the month.

PRICES OF FAT STOCK.

<i>Week ended</i>	s.	d.	<i>Week ended</i>	s.	d.
5th February, 1938 ..	40	3	6th February, 1937	33	3
12th ,, ..	40	9	13th ,, ..	34	0
19th ,, ..	40	3	20th ,, ..	34	3
26th ,, ..	40	9	27th ,, ..	35	3
Average for month	40	6	Average for month ..	34	0
5th March, 1938	41	3	6th March, 1937	35	6

PRICES OF OTHER STOCK AT THE BELFAST AUCTION MARTS.

Description.	Week ended 5-2-38	Week ended 12-2-38	Week ended 19-2-38	Week ended 26-2-38	Week ended 5-3-38
Fat Cows ..	£14 to £21 £10-10 to £17-10	£14-10 to £21-5 £11 to £17-10	£15 to £21-5 £12 to £16-10	£15 to £21-10 £11 to £16-10	£15 to £22 £12 to £17-10
Store Cattle : Forward Stores ..	£13 to £17-7-6 £11 to £15	£13-10 to £17-5 £10 to £15	£13-10 to £16 £11-17-6 to £13-5	£14 to £17-5 £12-10 to £13-15	£14-10 to £15-12-6 £12-10 to £14-5
Calves (under 12 months)	£8-10 to £11 £7-5 to £8-10	£7-15 to £10-10 £5 to £7-10	£9-10 to £11-5 £7-5 to £9-5	£9 to £12 £6 to £8-10	£9-10 to £12-5 £6 to £9-5
Dairy Cattle : Milch Cows ..	£22 to £28 £18 to £21	£22 to £27 £18 to £21	£23 to £28 £18 to £22	£23 to £26 £18 to £22	£23 to £28 £17 to £22
Springers ..	£20 to £23 £17 to £19	£19 to £22 £16 to £18-10	£22 to £25 £18 to £21	£21 to £24-10 £17 to £20	£20 to £22-10 £17 to £19-10
Sheep and Lambs : Crossbred & White Ewes ..	35/- to 55/-	45/- to 60/- 35/- to 47/-	43/- to 60/- 35/- to 49/-	45/- to 61/- 35/- to 46/-	43/- to 70/- 35/- to 52/-
Blackface Ewes ..	30/- to 50/- 22/6 to 34/-	28/- to 46/- 22/- to 34/-	33/- to 43/- 25/- to 34/-	35/- to 46/- 25/- to 34/-	30/- to 45/- 23/6 to 34/-
Crossbred & White Lambs ..	40/- to 61/- 30/- to 44/-	40/- to 58/- 30/- to 44/-	40/- to 64/- 30/- to 44/-	40/- to 61/- 30/- to 44/-	42/- to 61/- 30/- to 44/-
Blackface Lambs ..	23/- to 28/- 16/- to 24/-	20/- to 28/6 14/- to 21/-	20/- to 35/- 13/6 to 24/6	12/- to 26/6	10/- to 23/-
Rams ..	Up to 87/- 40/- to 59/-	50/- to 66/- 40/- to 54/-	50/- to 70/- 40/- to 59/-	50/- to 66/- 40/- to 54/-	50/- to 65/- 38/- to 55/-

PRICES OF LIVE STOCK.

Average prices of Live Stock at Fairs during the month of February, 1938.

Date	Fair	Calves (under 9 months)	Store Cattle	Fat Cattle (18 months and over)	Springers		Milch Cows	Fat Lambs (under 12 months old)	Young Pigs
					Cows	Heifers			
		Per head £ s. 11/9 6 0 6 10/9	Per cwt. Live weight 40/- to 42/- 38/6 to 41/- 36/- to 42/-	Per cwt. Live wgt. 39/- 39/- 40/-	Per head £ s. 16 10 19 10	Per head £ s. 16 10 17 10	Per head £ s. 15 10 17 0	Per head £ s. +1 10 +1 12/6 +0 17/6	Per head £ s. — 1 8 1 7/6 1 14 1 9 1 12/6 1 17 1 10 1 18 1 19/6 1 10 1 12/6 1 17 1 15 1 10 — 1 14 1 15 — 1 12/6 1 15
1	Omagh	..	..	..	..	..	..	..	..
1	Strabane	..	..	..	..	..	..	..	..
2	Rathfriland	..	..	..	..	..	..	..	..
2	Londonderry	..	..	..	..	..	..	..	..
3	Ballymoney	..	..	..	..	..	..	..	..
4	Moy ..	..	..	..	..	..	..	..	..
8	Dungiven	..	..	..	..	..	..	..	..
8	Irvinestown	..	..	..	..	..	..	..	..
9	Crossgar	..	..	..	..	..	..	..	..
9	Kilrea ..	..	..	..	..	..	..	..	..
10	Enniskillen	..	..	..	..	..	..	..	..
11	Ballygawley	..	..	..	..	..	..	..	..
14	Limavady	..	..	..	..	..	..	..	..
16	Lisnakea	..	..	..	..	..	..	..	..
17	Ballynahinch	..	..	..	..	..	..	..	..
19	Portadown	..	..	..	..	..	..	..	..
21	Money more	..	..	..	..	..	..	..	..
21	Camlough	..	..	..	..	..	..	..	..
22	Fintona	..	..	..	..	..	..	..	..
24	Antrim	..	..	..	..	..	..	..	..
25	Killylea	..	..	..	..	..	..	..	..
25	Castlederg	..	..	..	..	..	..	..	..
26	Ballymena	..	..	..	..	..	..	..	..

* Long wool.

† Downs and Crossbred.

‡ Mountain.

SHIPMENTS OF LIVE STOCK.

Statement showing the shipments of Live Stock from Northern Ireland ports during the following periods :—Months of February, 1938, January, 1938, February, 1937 ; Two months ended 28th February, 1938, and 28th February, 1937.

PORTS OF :—	CATTLE						SHEEP			PIGS			Horses	
	Fat	Stores	Milch Cows	Springers.	Calves	Total	Fat	Stores	Lambs	Total	Fat	Stores	Total	
Belfast	5,401	5,408	900	16	30	11,755	3,077	—	—	3,077	5,522	—	5,522	175
Larne	16	1,975	—	—	—	1,991	—	—	—	—	1,286	80	1,366	13
Londonderry ..	243	5,514	20	18	232	6,027	439	—	—	439	416	—	416	6
Newry	6	185	—	1	—	192	—	—	—	—	158	—	158	—
Total, February, 1938 ..	5,666	13,082	920	35	262	19,965	3,516	—	—	3,516	7,382	80	7,462	194
Total, January, 1938 ..	5,134	12,353	1,069	75	236	18,867	7,116	—	—	7,116	12,828	278	13,106	171
Total, February, 1937 ..	7,876	12,899	1,005	60	313	22,153	4,895	—	—	4,895	11,790	172	11,962	146
Total, Two months ended 28th February, 1938 ..	10,800	25,435	1,989	110	498	38,832	10,632	—	—	10,632	20,210	358	20,568	365
Total, Two months ended, 28th February, 1937 ..	15,339	22,871	2,010	133	437	40,790	11,447	—	—	11,447	22,352	340	22,692	314

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 31st January, 1938, with comparative figures for the corresponding period in 1937. This information includes trade with Eire across the land boundary.

(These figures are supplied through the courtesy of the Ministry of Commerce, and are subject to revision).

Commodity	IMPORTS		EXPORTS	
	Month ended 31st January		Month ended 31st January	
	1938	1937	1938	1937
Bacon cwt.	2,915	1,835	29,176	32,329
Hams cwt.	1,204	1,339	11,190	10,606
Pork cwt.	306	854	1,860	2,487
Butter cwt.	13,270	13,708	201	165
Eggs Gt. hds.	32,414	29,759	91,435	93,387
Oat Products (inc. Oatmeal) .. cwt.	2,138	1,647	7,565	11,749
Potatoes tons	271	501	*26,723	*25,761
Poultry cwt.	299	443	21,551	36,766
Grass Seeds .. cwt.	2,657	1,286	36,118	59,715

*These figures represent the quantities of potatoes inspected for shipment by the Ministry of Agriculture.

Table showing the numbers of Live Stock (1) exposed for sale, and (2) sold at 19 fairs in Northern Ireland, during the months of February, 1937, and January and February, 1938 :—

Description of Live Stock	February, 1937		January, 1938		February, 1938	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ..	6,724	4,318	6,093	4,539	5,354	4,184
Fat Cattle ..	1,781	1,576	1,340	1,192	1,597	1,429
Dairy Cattle ..	1,045	773	973	788	954	778
Sheep ..	301	199	183	133	127	89
Lambs ..	123	78	198	114	143	96
Young Pigs ..	2,731	2,065	3,083	2,333	2,492	2,044

ACCOUNT OF TRADE AT FAIRS.

The offerings of store cattle at fairs held during February continued small for the time of year, and with shippers and dealers attending in good numbers a very strong demand was in evidence throughout the month. As a rule the animals were of good quality. Forward stock were a sharp selling trade, especially good quality bullocks for fattening, but nice heifers for breeding and small animals for grazing met a keen enquiry. With supplies limited for requirements good clearances were made at most centres, and prices generally were unchanged to firmer on the month. Fat cattle were in average supply at most centres, and although the demand was a little easier most of the animals were sold at prices showing little variation on the month. Medium-weight animals showing quality and finish were in best request. Small offerings of dairy cattle were usually of moderate quality. Good young springing cows and heifers encountered a good demand, and for these late rates prevailed, but for the bulk of the offerings, made up of secondary and inferior types, sales were slower and prices cheapened. The small supplies of sheep were generally of poor quality and condition, and except for those fat animals suitable for the immediate requirements of local butchers trade was very dull. At most fairs the supplies of young pigs were shorter than usual. A very sharp trade was experienced in this section at prices showing some improvement. There was also a better demand for breeding sows, and the small numbers of good animals were readily cashed at prices tending firmer.

11th March, 1938.

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| " 16. The Feeding of Dairy Cows. | " 61. The Care and Management of Breeding Bulls. |
| " 17. Home Bottling of Fruits and Vegetables. | " 62. The Production of Timber on the Farm. |
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| " 19. How to Feed Linseed. | " 64. The Destruction of Warble Fly Maggots in Cattle. |
| " 20. The Hatching and Rearing of Chickens. | " 65. The Packing of Apples in Barrels. |
| " 21. The Uses and Advantages of Portable Poultry Houses. | " 66. Seed Testing Facilities for Traders. |
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CIRCULARS.

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| " 11. Fertilisers and Feeding Stuffs Act—General Summary. |
| " 12. The Treatment of Liver Fluke. |
| " 13. The ox-Warble Fly. |
| " 306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations. |

MISCELLANEOUS PUBLICATIONS.

- Store Cattle.
- Reports on Egg-Laying Tests.
- Crop Insurance.
- List of Growers of Certified Crops of Immune Varieties of Potatoes.
- List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
- The Ministry's Monthly Report.
- Register of Premium Stallions.
- Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
- Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated :—

- (1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
- (3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.

